Evaluation of the In-School Tobacco Use Prevention Education Program, 2003-2004: Technical Findings and Documentation

California Department of Public Health
California Tobacco Control Program

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CHAPTER 1

INTRODUCTION AND METHODS

CHAPTER 1: INTRODUCTION AND METHODS

CHAPTER HIGHLIGHTS

- **The 2003-2004 In-School Evaluation of Tobacco Use Prevention Education (TUPE) Programs (IETP) provides an excellent opportunity to understand tobacco use patterns and to assess tobacco use prevention activities directed at in-school youth in California.**
- **The 2003-2004 IETP relied on data collected through the in-school administration of the 2003-2004 California Student Tobacco Survey (CSTS) as well as teacher/administrator surveys to examine adolescent tobacco use and its correlates, school-based tobacco use prevention and intervention activities and student responses to these activities in California public schools.**
- **The evaluation relied on a cross-sectional design that allowed for comparisons of data from students, teachers, and administrators at one point in time. It was also possible to examine trends over time by using data obtained from common questions from the 2001-2002 IETP and from the three previous IESS surveys.**
- **Descriptive statistics showing levels of tobacco use, attitudes, and beliefs about tobacco use; exposure to anti- and pro-smoking media and social marketing influences; and exposure to tobacco education programs at school are presented. These analyses are based exclusively on the 2003-2004 California Student Tobacco Survey (CSTS) and teacher/administrator surveys.**
- **261 of the 307 schools eligible to participate in the IETP took part, yielding a school response rate of 85.0 percent. The student response rate was 66.3 percent and teacher/administrator response rates ranged from 85 percent to 95 percent. Both school level and student level participation rates were higher in middle schools than in high schools (89.7 percent vs. 82.1 percent for schools and 70.2 percent vs. 63.8 percent for students). The overall response rates for middle schools and high schools were 63.0 percent and 52.4 percent, respectively.**

Introduction

The 2003-2004 In-School Evaluation of Tobacco Use Prevention Education (TUPE) Programs (IETP) was conducted to fulfill the enabling legislation requirements of Prop 99 (Assembly Bills 75, 99, and 816; and Senate Bill 391). Current pertinent legislative language requires that the California Department of Health Services (CDHS) evaluate the effectiveness of the school-based TUPE programs in California. This particular evaluation focused on school-based tobacco use prevention activities in 261 randomly sampled schools. The guidelines for evaluating the programs outlined in California Health and Safety Code Section 104375 call for an assessment of school-based tobacco use prevention activities and measurement of student responses to these activities.

This report is the fifth biennial report, following up on results presented in the 2001-2002 IETP and three previous IESS reports (Independent Evaluation Consortium, 1998a, 1998b, and 2003). Most of the questions included in the 2003-2004 IETP were taken from the previous evaluations to permit comparability of findings across reports. This newest IETP collected extensive information on adolescent tobacco use and its correlates (e.g., attitudes, exposure to media, social norms) through the in-school administration of the 2003-2004 CSTS. The evaluation also collected data on beliefs and knowledge about tobacco education program implementation and prevention efforts from teachers, school administrators, school TUPE/health coordinators, and district TUPE/health coordinators. The current report uses data from all of these sources to examine TUPE program implementation and program effectiveness. This first chapter provides a summary of the design and methodology used in the 2003-2004 IETP.

The IETP provides an excellent opportunity to understand tobacco use patterns and to assess tobacco use prevention activities directed at in-school youth in California. Studies show that 80 percent of U.S. adult smokers between the ages of 30 and 39 began to smoke during their adolescent years (CDC, 1994, Anda et al., 1999). These findings suggest that if youth smoking can be prevented, most youth will never start smoking when they become adults [USDHSS, 1994]. On the other hand, recent success at reducing younger adolescent tobacco use has been associated with increases in initiation by older adolescents and young adults (Glied, 2003).

Background

In November 1988, California voters approved the Tobacco Tax and Health Protection Act of 1988 (Prop 99), which added a 25-cent tax to each pack of cigarettes and a proportional amount to other tobacco products sold in the state. The additional revenues resulting from this increase in the tobacco excise tax were earmarked for tobacco-related research, health education, health care, and environmental conservation. Twenty percent of the Prop 99 revenues were appropriated to the Health Education Account (HEA) to support a comprehensive TUPE program and media campaign.

Approximately one-third of the overall HEA budget was allocated to the California Department of Education (CDE). Ninety percent of these funds are used for school-based TUPE programs in school districts. The remaining ten percent of local assistance funds are used for innovative and promising projects, programs for Indian Education Centers, research, curricular support, dissemination, and accountability.

Prior to 1994, CDE allocated school-based TUPE funds on an entitlement basis to all schools that served students in grades K through 12. Since 1994, CDE has allocated school-based TUPE funds to school districts using two different mechanisms. First, funds for TUPE programs in grades four through eight have been allocated to districts on an "entitlement basis" – all schools in tobacco-free school districts serving students in grades four through eight received funding for tobacco use prevention services based on average daily attendance. Second, a "competitive grant" process was used to allocate funds for programs in grades 9 through 12; and, more recently, for innovative programs in grades 6 through 8. Districts with multifaceted programs with measurable objectives, strong rationales for interventions, high levels of community and school involvement, high quality monitoring and evaluation activities, and highly qualified personnel are more likely to receive competitive grants than other districts. Both entitlement and competitive program funds are required to support tobacco-specific instruction, reinforcement activities, special events, and tobacco use cessation programs for students. The IETP provides information from data collected in districts supported by both of these mechanisms, with particular attention paid to schools with competitive grants because their additional TUPE resources, compared to non-TUPE award schools, were expected to yield measurable improvement in TUPE outcomes. Because TUPE funds were allocated more evenly among middle schools, there was less expectation of finding differences between schools in relation to TUPE funding.

Evaluation Design

As discussed above, the IETP relied on data collected from a variety of sources to examine school-based tobacco use prevention and intervention activities and student responses to these activities in California public schools. Each of the instruments is discussed in more detail below.

The evaluation focused on three broad research questions with regard to youth tobacco use and prevention in California:

1. What was the prevalence of tobacco-related behavior, attitudes, knowledge and awareness about tobacco and tobacco use prevention among California students in 2003-2004?

2. What types of school-based tobacco use prevention and intervention policies and practices were being implemented in California schools in 2003-2004, and to what level and consistency were they being implemented?

3. Was program exposure associated with lower levels of student tobacco use and with lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes)?

4. What are the contextual influences, such as the degree of support for teaching TUPE lessons from district administrators, that need to be taken into account when designing more effective school-based TUPE programs?

To answer these four questions the evaluation relied on a cross-sectional design that allowed for comparisons of data from students, teachers, and administrators at one point in time. It was also possible to examine trends over time by using data obtained from common questions from the 2001-2002 IETP and from the three previous IESS surveys. As with all cross-sectional data, however, time-dependent causal inferences cannot be made with confidence.

Question #1: Prevalence of Youth Tobacco Use

Descriptive statistics showing levels of tobacco use, attitudes, and beliefs about tobacco use; exposure to anti- and pro-smoking media and social marketing influences; and, exposure to tobacco education programs at school are presented. The answers to these questions will advance knowledge of the scope and nature of tobacco use among youth, and how youth tobacco use relates to student perceptions of the types of tobacco use prevention programs offered in schools. The analysis of the prevalence of youth tobacco use and its correlates (question one) is purely descriptive. These analyses are based exclusively on the 2003-2004 California Student Tobacco Survey (CSTS). Most of the results are presented graphically, showing the prevalence of tobacco use and its correlates by school grade or school type (middle vs. high). All of the estimates are adjusted for sample weighting, the sampling design, and corrected for differential non-response. All estimates were also compared to the 2001-2002 CSTS data and with contemporaneous tobacco use data collected from other sources to validate the most recent CSTS results, to assess recent trends in student tobacco use and tobacco use correlates, and to permit comparisons of tobacco use patterns in California with those reported in the nation as a whole.

Question #2: Types of School-based TUPE Policies and Practices

Data from teacher, school administrator (e.g., principals, vice principals, and superintendents), school TUPE/health coordinator, and district TUPE coordinator surveys were used to address question number 2. The types of questions asked in the adult surveys allowed comparisons with CDC Guidelines for school-based programs and comparison between adults' and students' perceptions about TUPE program delivery.

Descriptive statistics that are presented address the following:

- Tobacco control program implementation;
- The types of programs implemented;

- Enforcement of school tobacco policies;
- Barriers to program implementation;
- Staff attitudes about tobacco use prevention activities; and,
- Differences in policies and practices between TUPE grantee and non-grantee high schools.

As with the CSTS results, all estimates were weighted to account for differences in enrollment across schools and to correct for variation in response rates. Finally, to assess how effective program implementation was in reaching students, the relationship between program implementation, as reported by administrators and teachers, and student exposure to program components, as reported by students, was examined. This analysis takes advantage of the parallel structure of the surveys given to administrators, teachers, and students.

With cross-sectional data it is difficult to accurately determine how TUPE policies and practices have changed over time. To make inferences about change, this report examined the relationship between duration of TUPE funding support and reports from the adult staff about school-level TUPE policies and TUPE programs implemented in their high schools. This comparison was not conducted for grades six through eight because all school districts were eligible to receive TUPE entitlement funds for these grades, and the middle school competitive TUPE grant program came into being too recently to expect that the benefits of receiving such funding would already be evident. Information about duration of TUPE funding support came from an administrative database supplied by the Safe and Healthy Kids Program Office (SHKPO) at CDE.

Question #3: Impact of Tobacco Control Program Exposure

The analyses of program effectiveness were limited by factors that affect all cross-sectional survey designs. The analyses allowed us to examine associations between program participation/exposure and student tobacco outcomes. However, strong inferences about causal direction could not be made, and all assessments of TUPE program impact should be made with caution, as will be discussed when study limitations are discussed.

Question #4: Contextual Influences

Flay (2000) and others have reviewed the literature on school-based tobacco use prevention and concluded that long-term sustainability of tobacco use prevention efforts in schools depends on the level of support for tobacco control in the community surrounding the school. Chapters 7 and 8 examine contextual issues such as the perceived level of support for the school's TUPE efforts from the school district on teachers' and students' attitudes toward tobacco control and the impact of punitive versus supportive responses to student violations of the school's smoke-free policy on student tobacco use outcomes.

Sample Design

The sample design included data collection from students, teachers and administrators at the school level, and administrators at the district level. Analytical weights that take into account the complex survey design and that correct for student and school non-response were applied in such a way that the sum of the weights was equal to the total number of respondents (specified below).

The 2003-2004 California Student Tobacco Survey

The 2003-2004 CSTS was a school-based, two-stage cluster sample designed to produce representative estimates of tobacco use and tobacco use-related attitudes for public school students in grades 6 through 12 in California. The first-stage of the sampling frame consisted of 2,234 public middle and high schools (primary sampling units). This sampling frame came from the 2001 California Basic Educational Data System (CBEDS) maintained by CDE. From the 2,234 primary sampling units, 307 schools were selected randomly within a grade range from 12 regions (strata) formed on the basis of county demographic and socio-economic characteristics (age, race, population density, income, poverty, and Medi-Cal status). Schools were selected with a probability proportional to enrollment. Of the sampled 307 schools, 261 participated in the survey. There were a variety of reasons for school non-participation. The most common reason was that administrators felt that their students were already being subjected to too many other surveys (such as the California Healthy Kids Survey) that were perceived to address more pressing school-related issues (e.g., drug use and violence) than tobacco use. Some of the other more common reasons for non-participation included: lack of adequate parent informed consent, scheduling changes, and administrator disinterest in compliance with the requirement for schools to participate if receiving TUPE funding.

At the second stage of sampling, five intact classes of required subjects (e.g., English) were randomly selected from each of the 307 schools. In middle schools, two classes per grade for two of the grades, and one class for one randomly selected grade were sampled. One class for each grade for three of the grades and two classes for one randomly selected grade were sampled at high schools. Three classrooms at three different grade levels were randomly selected at high schools, two to three classrooms (one sixth-, one seventh-, and one eighth- grade class based on school configuration) at middle schools, and one sixth-grade class at elementary schools. All the students within a selected class were eligible to participate. To participate, students needed the written consent of their parents. The complex sampling design of the CSTS required the calculation of sample weights to derive accurate point estimates and adjustments for clustering and stratification in order to compute sampling variances and standard errors. A weight was applied to each student record to account for varying probabilities of selection at each sampling stage, non-response, and disproportionate population sampling. These weights are necessary in order for the results to be generalized to all students attending public middle and high schools in grades 6 through 12 in California.

The weight used for estimation is given by:

$$W_S = W_{S1} * W_{S2} * F_{S1} * F_{S2} * F_{S3}$$

Where W_{S1} represents the inverse of the probability of selecting a school, W_{S2} is the inverse of the probability of selecting a classroom within each school for each grade, F_{S1} is a school-level non-response adjustment factor, F_{S2} is a student-level non-response adjustment factor, and F_{S3} is a post-stratification adjustment factor calculated by gender, grade (grades 6 through 12), and ethnicity (seven ethnic groups). The weights were also scaled so that the sum of the weights was equal to the number of respondents.

Teacher/Administrator Surveys

The sampling frame for the teacher, school administrator, and school TUPE coordinator surveys (described below) consisted of all schools/classrooms that administered the CSTS. Thus, the school teacher/administrator samples represent teachers and administrators who serve students in the CSTS sample. Similarly, the district coordinator sample represents district TUPE/Title IV[1] coordinators who serve CSTS students. As was done for the CSTS, a weight was applied to each record in the teacher/administrator surveys to account for differences in student enrollment across regions, districts, and schools.[2]

Survey Participation Rates and Sample Characteristics

The response rates for schools and students were adequate, especially in light of the recent emphasis on high stakes academic performance testing that has made school administrators less willing to use class time for the administration of social surveys. Moreover, schools are increasingly asked to participate in surveys conducted by outside agencies in addition to the accountability measures required by funding agencies from which schools receive grants.

California Student Tobacco Survey

Of the 307 schools eligible to participate in the IETP, student data was received from 261 schools – yielding a school response rate of 85.0 percent. The student response rate was 66.3 percent. Thus, the school- and student-level response rates resulted in an overall response rate of 56.3 percent (0.850*0.663). The student response rate was

[1] In this context Title IV refers to that section of the U.S. Education Code that governs the use of federal resources for combating student substance abuse and addressing student violence, notably through the Safe and Drug-Free Schools Program of the U.S. Department of Education.

[2] The teacher/administrator weights were calculated using an algorithm patterned after the weighting algorithm used to weight the student data. The weights were given by: $W_A = W_{A1} * F_{A1} * F_{A2}$ where W_{A1} represents the inverse of the number of respondents within a school (district), F_{A1} is the ratio of region enrollment to state enrollment, and F_{A2} is the ratio of school/district enrollment to the total enrollment of responding schools/districts within a region. The teacher/administrator weights were scaled so that the sum of the weights was equal to the number of respondents.

adversely affected by failure to return parental consent forms. As noted above, weights were calculated to account for non-response.

Both school-level and student-level participation rates were higher in middle schools than in high schools (89.7 percent vs. 82.1 percent for schools and 70.2 percent vs. 63.8 percent for students). The overall response rate for middle schools and high schools were 63.0 percent and 52.4 percent, respectively. **Table 1.1** presents school participation rates by TUPE grantee status. The numbers indicate that school participation rates were substantially higher in high schools with competitive TUPE grants than in other schools (90.4 percent for current grantees vs. 74.0 percent for current non-grantees). These patterns are as expected: schools that do not have a TUPE grant have less incentive to participate than schools that have a grant.

Table 1.1 School Participation Rates by Various Characteristics

	All Schools		Middle Schools		High Schools	
	Non-Participants	**Participants**	**Non-Participants**	**Participants**	**Non-Participants**	**Participants**
Overall Percent	15.0%	85.0%	10.3%	89.7%	17.9%	82.1%
Current TUPE Grantee Status						
Non-TUPE	17.9%	82.1%	10.5%	89.5%	26.0%	74.0%
TUPE	9.4%	90.6%	8.3%	91.7%	9.6%	90.4%A
Ever TUPE Grantee Status						
Never-TUPE	16.6%	83.4%	6.3%	93.8%	17.7%	82.3%
Ever TUPE	13.2%	86.8%	10.9%	89.1%	18.6%	81.4%
Number of Schools	**46**	**261**	**12**	**105**	**34**	**156**

Note: Source: 2003-2004 CSTS sample definition database and CDE/SHKPO TUPE competitive Grantee Database.
A Percentage of participating schools are statistically different across groups ($p \leq 0.05$).

Table 1.2 shows various demographic characteristics by school participation. Overall, the numbers provide no evidence that participating schools differ from those that did not participate with regards to enrollment, ethnic composition, the percentage of students receiving subsidized meals and California Work Opportunity and Responsibility to Kids (CalWORKs) support, or academic test scores. There is little indication of any sample selectivity with regards to CSTS participation – at least at the school level.

Table 1.2 School Characteristics by CSTS School Participation

	All Schools		Middle Schools		High Schools	
	Non-Participants	Participants	Non-Participants	Participants	Non-Participants	Participants
School Enrollment	1873.7	1733.3	969.3	1045.0	2192.8	2196.5
Ethnicity						
Asian	11.0%	9.4%	12.2%	9.4%	10.6%	9.3%
Hispanic/Latino(a)	37.2%	36.2%	31.6%	37.0%	39.2%	35.6%
African American	9.4%	7.7%	12.1%	6.9%	8.4%	8.3%
Caucasian	37.0%	40.6%	39.2%	41.1%	36.3%	40.3%
Reduce/Free meals	34.9%	34.0%	37.5%	39.0%	33.9%	30.7%
CALWORKS	9.2%	7.5%	9.7%	8.1%	9.1%	7.1%
Academic Performance Index Scores	683.6	687.2	724.8	710.9	668.2	670.8

Note: Source: 2001-2002 CSTS sample definition database and CBEDS.
A Means are statistically different across participating and non-participating schools ($p \leq 0.05$).

Table 1.3 presents demographic characteristics based on the CSTS and CBEDS data. A comparison of CSTS and CBEDS results shows few substantial differences, although CSTS student data appears to over-represent sixth graders. The CSTS sample weights were adjusted to account for the exclusion of elementary schools from the sampling frame, while the CBEDS results do not adjust for this. In addition, the CSTS data appears to slightly over-represent American Indian students and under-represent Hispanic/Latino(a) students compared to CBEDS data. These ethnic differences, however, should be interpreted with caution because the CSTS and CBEDS use different methodologies to assess ethnicity. The population estimates presented in the last few rows of the table are quite similar across the two data sources. Overall, the estimates derived from the two data sources are similar.

Table 1.3 Sample School/Student Characteristics

	CSTS	CBEDS
Sample		
Middle School	38.5%	41.3%
High School	61.5	58.7
Urbanicity [A]		
Large City	23.7%	23.3%
Urban Fringe – Large City	36.6	38.4
Midsize City	19.9	23.1
Urban Fringe – Midsize City	8.8	8.5
Large Town	0.0	0.1
Small Town	1.2	1.3
Rural	9.8	5.3
School Grade		
6th	16.0%	9.1
7th	11.3	15.3
8th	11.2	15.3
9th	17.5	17.2
10th	16.3	16.0
11th	14.6	14.3
12th	13.1	12.9
Gender		
Female	48.8%	48.8%
Male	51.2	51.2
Ethnicity [B]		
American Indian	1.7%	0.9%
Asian	10.0	8.5
African American	8.8	8.4
Hispanic/Latino(a)	39.6	42.7
Pacific Islander/Filipino	2.5	3.3
Caucasian	37.3	35.0
Multi-Ethnic	–	1.2
Population Size		
Total	3,016,938	3,034,272
Number of observations	25,973	–

Note: Source: 2001-2002 CSTS and CBEDS.
[A] Population areas as defined by U.S. Census Bureau.
[B] CSTS estimates are based on a question asking respondents to identify one ethnic category that best describes her/himself.

Adult Participants

Table 1.4 presents survey response rates for the teacher/administrator surveys. The school teacher/administrator response rates ranged from 85 percent to 95 percent, rates higher than reported in other studies involving teacher surveys (e.g., Buston et al., 2002). Teachers exhibited the highest response rates, followed respectively by school

coordinators, school administrators, and district coordinators.[3] No substantial participant/non-participant differences in school characteristics were found. However, district coordinator participation was higher among TUPE grantee districts than non-grantee districts (91.5 percent vs. 71.9 percent). No other compositional differences were found between schools in districts where the district coordinator returned the survey.

Table 1.4 Adult Survey Participation Rates

Survey Participants	Number participating	Participation Rate
Teacher	1,122	95.2%
School Administrator	240	91.2%
School Coordinator	238	92.0%
District Coordinator	133	85.8%

Data Collection Instruments

This next section presents the details of each of the survey instruments for students, teachers, site administrators, site coordinators and district coordinators.

California Student Tobacco Survey

The 2003-2004 student survey (CSTS) included 99 multiple-choice questions, with item content based largely on the questions found in the National Youth Tobacco Survey (NYTS-U.S.).[4] On most items, respondents were asked to select only one response that best represented their behaviors, attitudes, knowledge, and awareness about tobacco and tobacco use prevention. The majority of students were able to complete the entire survey during the allotted class period. All student responses were recorded on a separate 99-item scannable answer sheet, where students bubbled-in their responses. The survey was typed in large, boldface, and easy-to-read type, and contained user-friendly graphics to encourage student participation. Surveys were bound in a paperback booklet with directions printed on the front. Student surveys were routinely collected after survey administration and checked for stray marks or writing. Spanish translations were made available to all schools. Almost all students chose to complete the survey in English. The purpose of providing a Spanish version to the schools was primarily to make it easy for Spanish-speaking parents to review the survey if they wanted to, before consenting to their child's participation. The Spanish language

[3] The “district coordinator” refers to the school district-appointed administrator responsible for coordinating school TUPE coordinators and was generally the person responsible for arranging TUPE training of teachers. The “school coordinator” refers to the person, usually a teacher, who helped to coordinate TUPE activities in the school. School-wide tobacco use education activities such as implementation of the Great American Smokeout and TUPE assemblies were usually the responsibility of the school coordinator. The “school administrator” was most often the principal or assistant principal of the school.
[4] See http://tobacco.rti.org/devalf/surveys.cfm.

version was generated by a professional translation agency, which back-translated the first translation and then made additional modifications to the first translation in the few instances where the meaning of the back-translation diverged from the original.

The CSTS covered the following areas of content:

1. Student Demographics: questions ascertained students' age, gender, grade level, and ethnicity.

2. Tobacco Use Prevalence and Patterns: the items on tobacco use covered lifetime, six month, and 30-day use of tobacco. These are standard items comparable to those found in major national surveys such as the NYTS. Items also addressed quit attempts, brand preference, intent to use, and acquisition of the tobacco use habit.

3. Attitudes and Beliefs about Tobacco Use: these items asked about friends' use, perceived prevalence of friends' use, perceived harm from using tobacco, and perceived social consequences of tobacco use.

4. Media and Social Marketing Influences: the media influence items were intended to elicit information about exposure to various anti-tobacco media campaigns. They also assessed pro-tobacco and anti-tobacco social marketing campaigns and respondents' attitudes and beliefs about the effectiveness of these campaigns.

5. Exposure to Educational Programs at School: these items asked respondents about the types of tobacco-related programs and policies at their school, the frequency with which they were exposed to educational messages about the harmful effects of tobacco, and how to counter peer and media influences to use tobacco. These questions were included to assess how and to what extent tobacco use prevention and intervention programs were being implemented in the school.

Teacher Surveys

Teachers in each classroom of surveyed students were asked to complete a 63-item questionnaire while their students were completing the CSTS. The teacher survey was based largely on that used by the IESS (1998a, 1998b, 2003). The adult surveys asked about attitudes toward school-based tobacco use prevention activities, tobacco use prevention programs and policies at their school, and their own personal tobacco-related attitudes and behaviors. With the exception of one open-ended question, the survey was comprised of close-ended questions, with some opportunities to write in additional information (curricula titles, activities, topics, etc.) in blank spaces. On occasion, teachers were asked to mark all responses that applied. However, most teachers circled or checked-off the most accurate single response in the spaces provided on the survey. For instance, on a question about ten possible barriers to

teaching TUPE lessons and an eleventh “other” barrier that they could specify themselves, the average number of barriers selected was 2.2 (range = 0 to 9) where half of the respondents (50.9 percent) selected just one barrier. At the end of the survey, there was a “comments” section, where teachers could voluntarily share any personal comments about the tobacco use prevention program. This comment section permitted teachers to mention challenges or benefits of the TUPE program that had not been covered by the preceding questions. Only 89 teachers (7.9 percent) availed themselves of this opportunity, suggesting that most respondents believed that the questionnaire had been sufficiently exhaustive in its probing for evaluative comments about content and procedures used to implement TUPE activities at the teachers' school.

School Administrator Survey

A school site administrator (e.g., principal, assistant principal, or vice principal) from each school was asked to fill out a 39-item questionnaire regarding the administration of tobacco control programs at their school. The survey asked about the relative priority given to TUPE at their site compared to other priorities, about school-level tobacco use policies and practices, and the administrator's personal experience with smoking. As with the teacher survey, the school administrator survey was based on the IESS (1998a, 1998b, 2003).

School TUPE/Health Coordinator Survey

A 67-item multiple-choice and free-response (blank spaces, one open-ended question and comments section) questionnaire was given to TUPE site coordinators or health teachers at each school site. The person in this position at the school was asked about their experience with tobacco use prevention and intervention programs, their role in tobacco use prevention and education, barriers to prevention and their perceptions about student tobacco use, and the school’s policies and procedures for addressing tobacco use on school property.

District TUPE/ Title IV/ Health Coordinator Survey

After school site administration of the evaluation was complete, district level TUPE or Title IV Coordinators were mailed a 42-item questionnaire. Many of the questions paralleled those asked of the school administrators. However, the primary aim of the District Coordinator Survey was to elicit responses about the district-level approach to tobacco use prevention and intervention programming. Coordinators were asked about staffing for TUPE, professional development and training, experience with and exposure to CDC’s Guidelines for School Health Programs to Prevent Tobacco Use and Addiction, as well as their perceptions/knowledge about commonly implemented approaches to tobacco use prevention at their schools.

Data Collection and Processing

WestEd staff coordinated outreach and school recruitment, trained proctors, scheduled survey administration dates for surveyors, provided survey administration, secured parental consent, provided incentives and took a variety of steps to assure confidentiality for all respondents. The study instruments and study protocol were approved for use by the Committee for the Protection of Human Subjects for CDPH in September, 2003. Incentives included $100 per participating classroom to each participating school, to help offset the additional clerical and administrative costs to the school of cooperating with this study. Additional incentives included $40-$60 to each teacher in the classrooms surveyed and a $15 raffle in each class as an incentive for the students to participate.

The data collection phase began October 5, 2003, and ended March 9, 2004 – with 72 percent of the schools' surveys taking place prior to January 1, 2004. Recruitment was most intensive at the beginning of this period, but continued, concurrent with data collection, during the entire five months. Once a site was successfully recruited and agreed to participate in the evaluation, trained WestEd survey proctors administered the student surveys at the school sites. A standard class period was needed for the administration of the student survey. Participants were asked not to write their names anywhere on the questionnaire or answer sheet. All students were told of the voluntary and anonymous nature of the survey prior to survey administration. According to informal reports by CSTS proctors, most students completed the survey in 30 to 40 minutes. No student was allowed to take the CSTS unless a parent/guardian provided written consent by signing and returning the consent form. The impact of the time of survey administration on student reports of classroom exposure to tobacco education was negligible (OR = 1.00, [95 CI = .99, 1.00], $p>0.05$).

Classroom teachers completed their surveys while their students completed the CSTS. The administrator and TUPE/health coordinator surveys were administered primarily via mail and fax.

Contents of Remaining Chapters

The contents of the remaining chapters are briefly summarized below:

CHAPTER 2: Student-level Descriptive Data Regarding Tobacco Use and its Correlates

- Examines trends in tobacco use
- Examines patterns of use in California compared to elsewhere in the United States, by grade, by gender and by ethnic affiliation
- Compares the 2003-2004 CSTS student data with the previous CSTS, IESS, California Attorney General's California Student Survey (CSS), NYTS-U.S., and the California sample from the NYTS-U.S.-CA

CHAPTER 3: Student-level Descriptives: Attitudes and Beliefs About Tobacco Use

- Examines student attitudes and cognitive precursors of tobacco use

- Examines pro- and anti-tobacco media exposure
- Investigates perceptions of exposure to tobacco control lessons

CHAPTER 4: Descriptives at the Teacher Level
- Examines teachers' history of tobacco use
- Looks at provision of support for TUPE
- Examines involvement in student tobacco use prevention

CHAPTER 5: School TUPE Competitive Grant Funding, Program Exposure, and Student Tobacco Use
- Examines variance between middle and high schools that were awarded competitive TUPE grants and schools that did not receive TUPE grants
- Describes the level of teachers' compliance with CDC recommendations for successful tobacco control programs in schools

CHAPTER 6: Knowledge of TUPE Program Implementation
- Examines information descriptive of school-level TUPE activities obtained from school TUPE coordinators, including adherence to CDC recommendations

CHAPTER 7: Relationship of School-level Policies and Procedures to Student Program Exposure
- Examines how school tobacco policies and practices, such as enforcement of the school's no-tobacco-use-on-campus policies, delivery of tobacco use prevention curricula, and sponsorship of school-wide prevention activities are related to students' reported exposure to program services
- Investigates differences in program delivery in high schools that received competitive TUPE grants relative to those that did not receive grants

CHAPTER 8: Relationship of School-level Policies and Practices to Student Tobacco Use Outcomes
- Examines how school tobacco policies and practices are related to student tobacco use outcomes
- Explores competitive grantee and non-grantee differences in the relationships of policies and practices to tobacco use outcomes

CHAPTER 9: Conclusions and Recommendations

References

Anda, R. F., J. B. Croft, V. J. Felitti, D. Nordenberg, W. H. Giles, D. F. Williamson, and G. A. Giovino. 1999. Adverse childhood experiences and smoking during adolescence and adulthood. Journal of the American Medical Association, 282, 1652-1658.

Buston, K., D. Wight, G. Hart, and S. Scott. Implementation of a teacher-delivered sex education programme: obstacles and facilitating factors. Health Education Research. 2002;17:59-72.

Centers for Disease Control and Prevention (CDC). 1994. Guidelines for school health programs to prevent tobacco use and addiction. Morbidity Mortality Weekly Report, 43, 1-18.

Glied, S. Is smoking delayed smoking averted? American Journal of Public Health. 2003;93:412-416.

Independent Evaluation Consortium. 1998a. Final Report of the Independent Evaluation of the California Tobacco Control Prevention and Education Program: Wave 1 Data, 1996-1997. Rockville, MD: Gallup Organization.

Independent Evaluation Consortium. 1998b. Final Report of the Independent Evaluation of the California Tobacco Control Prevention and Education Program: Wave 2 Data, 1998; Wave 1 and Wave 2 Data Comparisons, 1996-1998. Rockville, MD: Gallup Organization.

Independent Evaluation Consortium. 2003. Final Report: Independent Evaluation of the California Tobacco Control Program: Waves 1, 2, and 3 (1996-2000). Rockville, MD: Gallup Organization.

U.S. Department of Health and Human Services (USDHHS). Preventing Tobacco Use Among Young People: A Report of the Surgeon General: USDHHS, Public Health Service, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Atlanta, Georgia. 1994.

CHAPTER 2

STUDENT-LEVEL DATA REGARDING TOBACCO USE AND CORRELATES

CHAPTER 2: STUDENT-LEVEL DATA REGARDING TOBACCO USE AND CORRELATES

CHAPTER HIGHLIGHTS

- **Prevalence of youth tobacco use was generally low in California, but increased with each successive grade. For example, current cigarette use ranges from two percent in 6th grade to 17 percent in 12th grade.**
- **Youth tobacco use was more prevalent among boys and among Caucasians.**
- **There were no consistent regional differences in lifetime and current smoking, although California's Central Valley exhibited the highest lifetime smoking prevalence (have you ever smoked?) at 41 percent.**
- **Tobacco use among California youth continues to show a decreasing trend over time and to be the lowest among the nation's youth; and at least half of the students who reported having ever smoked expressed a desire to quit for good.**
- **A great majority of California youth reported that they "definitely would not" smoke in the following year (75 percent of middle-schoolers and 59 percent of high-schoolers).**

Introduction

Tobacco use among young people in the United States is a widespread problem with serious health and social consequences. Since most tobacco use behavior is initiated during adolescence (Lee et al., 1993), understanding tobacco use and its correlates among adolescents is important in designing effective smoking prevention programs. This chapter reviews student-level descriptive data on tobacco use and its correlates, and it focuses on the following:

1. Current prevalence estimates for the most common measures of youth tobacco use obtained from the 2003-2004 CSTS.

2. 2003-2004 CSTS tobacco use prevalence estimates in light of trend information reported by the 1995-1996, 1997-1998, 1999-2001 administrations of the IESS, and the 2001-2002 CSTS.

3. A comparison of 2003-2004 CSTS tobacco use prevalence estimates with the prevalence estimates obtained from the 2002 NYTS, and the California Attorney General's CSS.

4. Prevalence estimates for intent not to use cigarettes, quitting smoking, and use of cessation programs from the 2003-2004 CSTS.

The tobacco use prevalence questions in the CSTS were chosen to ensure comparability with tobacco use questions administered in the past to California students (three previous IESS surveys and the CSS), and to students nationally (2002 NYTS). These surveys used comparable methodology – they all relied on representative data from in-school youth via paper and pencil self-report instruments. The surveys differed however, as to when they were administered. Most CSTS 2003-2004 data was collected in the fall of 2003, whereas most NYTS and CSS data was collected in the spring of their respective years. Higher tobacco use prevalence estimates were observed in the NYTS but not in the CSS. Additionally, the CSS tobacco use questions were embedded in lists of questions about other drug use and alcohol use whereas the CSTS, IESS and NYTS questions were limited to tobacco use behaviors.

Lifetime Cigarette Use

Lifetime cigarette use was assessed using the question, “Have you ever smoked cigarettes, even one or two puffs?” **Table 2.1** shows the proportion of students who responded “yes” to this question. As has been generally true of previous surveys of adolescent tobacco use in the U.S., rates of lifetime use increase monotonically with increasing grade (**Figure 2.1**). Boys reported higher rates of lifetime smoking than girls (35.1 percent vs. 32.0 percent, respectively, $p < .05$) (**Table 2.2**).

Table 2.1 Lifetime Cigarette Use by Grade and Ethnicity

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	9.4% [7.6, 11.7]	10.9% [5.7, 19.8]	21.3% [12.1, 34.7]	9.6% [8.0, 11.6]	5.6% [3.5, 8.7]
7th	16.8% [14.4, 19.6]	12.4% [8.0, 18.7]	35.6% [20.7, 53.8]	19.4% [16.9, 22.0]	9.9% [7.1, 13.7]
8th	26.4% [23.7, 29.2]	18.9% [14.0, 25.1]	30.6% [23.4, 38.8]	31.1% [26.6, 35.9]	21.9% [19.6, 23.4]
9th	35.3% [29.0, 42.2]	29.2% [22.6, 36.7]	40.3% [18.2, 67.3]	42.4% [33.6, 51.7]	27.6% [23.7, 31.9]
10th	43.0% [40.7, 45.3]	31.1% [20.7, 43.9]	42.6% [30.3, 55.9]	48.4% [45.0, 51.8]	42.4% [38.9, 46.0]
11th	47.8% [44.9, 50.7]	46.0% [39.6, 52.7]	38.3% [30.8, 46.4]	55.3% [51.4, 59.2]	42.5% [37.4, 47.8]
12th	52.0% [49.0, 55.1]	41.0% [34.6, 47.7]	42.4% [31.8, 53.7]	58.7% [53.1, 64.1]	52.1% [49.3, 54.8]
Total	33.6% [31.5, 35.7]	29.2% [25.8, 32.8]	36.1% [30.4, 42.3]	37.3% [34.1, 40.7]	30.6% [28.5, 32.9]

Note: Brackets contain the 95 percent confidence intervals.

Figure 2.1 Lifetime Cigarette Use

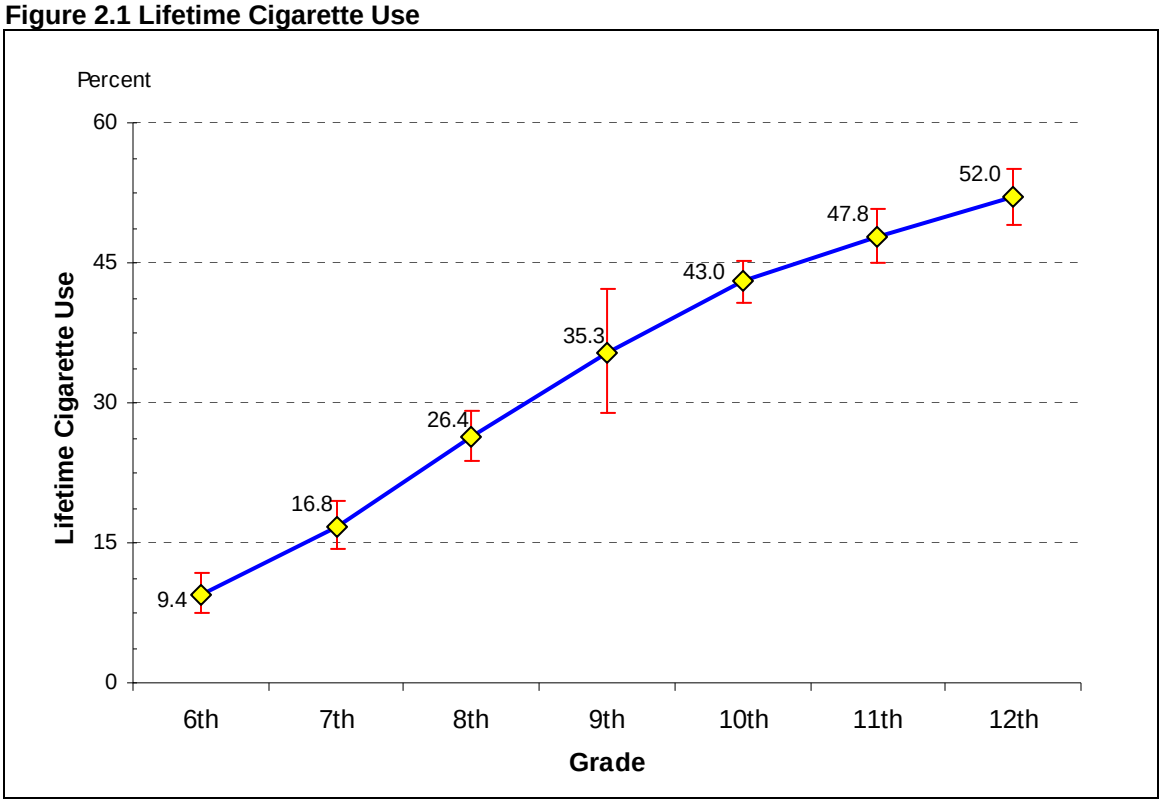


Table 2.2 Lifetime Cigarette Use by Grade and Gender

Grade	Overall	Female	Male
6th	9.4%	9.2%	9.6%
	[7.6, 11.7]	[6.9, 12.3]	[7.0, 13.0]
7th	16.8%	15.3%	18.4%
	[14.4, 19.6]	[12.7, 18.3]	[15.6, 21.4]
8th	26.4%	25.4%	27.3%
	[23.7, 29.2]	[21.7, 29.6]	[24.5, 30.2]
9th	35.3%	36.8%	33.9%
	[29.0, 42.2]	[27.7, 47.0]	[29.1, 39.1]
10th	43.0%	39.7%	46.1%
	[40.7, 45.3]	[34.6, 45.1]	[41.5, 50.7]
11th	47.8%	43.3%	52.2%
	[44.9, 50.7]	[39.3, 47.5]	[49.0, 55.4]
12th	52.0%	49.7%	54.3%
	[49.0, 55.1]	[45.9, 53.5]	[49.0, 59.5]
Total	33.6%	32.0%	35.1%
	[31.5, 35.7]	[29.8, 34.2]	[32.7, 37.6]

Note: Brackets contain the 95 percent confidence intervals.

Gender differences were more pronounced among 7th and 11th grade respondents. The observed rates reported in Table 2.1 and Figure 2.1 are likely to be underestimates of lifetime use for all 16 to18 year-olds, because adolescents in most states, including California, are permitted to drop out of school at age 16. Dropouts, obviously, would not have participated in the in-school CSTS survey. Other literature indicates much higher tobacco use rates among dropouts, compared to in-school youth of the same age (Pirie et al., 1988). Hence, all prevalence estimates derived from the data reported here only apply to in-school youth.

Current Cigarette Use

Current cigarette use is the most commonly used measure of smoking prevalence. Current cigarette use among youth is defined as smoking on one or more days during the past 30-days prior to the survey. The proportion of respondents who reported that they currently smoke increased monotonically from grade 6 through grade 12, ranging from 1.9 percent to 17.1 percent (**Table 2.3, Figure 2.2**). Increases in “current” smoking are most pronounced in grade 9 (the typical commencement of high school), and in grade 12 (age 18, when tobacco use becomes legal). Observed differences by ethnicity and gender were generally consistent with ethnic and gender differences in prevalence of current adolescent smoking observed elsewhere (e.g., NCI, 2001). Asian/Pacific Islanders and African Americans reported lower rates (6.9 percent and 7.1 percent) of current smoking than Caucasians did (11.2 percent). Boys reported a higher rate than girls (10.6 percent vs. 8.7 percent) (**Table 2.4**). Significant gender differences in prevalence of current smoking were observed in grades 7, 11, and 12.

Table 2.3 Current Cigarette Use by Grade and Ethnicity

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	1.9% [1.0, 3.5]	4.5% [0.8, 21.9]	5.9% [1.8, 18.0]	1.5% [0.9, 2.5]	0.3% [0.1, 1.0]
7th	4.2% [3.2, 5.6]	2.3% [1.4, 3.9]	11.8% [5.8, 22.5]	4.7% [3.7, 6.1]	2.3% [1.4, 3.8]
8th	6.6% [5.1, 8.5]	4.1% [2.4, 6.8]	3.2% [1.6, 6.3]	8.2% [5.9, 11.3]	6.5% [5.2, 8.1]
9th	9.3% [7.4, 11.6]	7.0% [4.2, 11.5]	3.7% [1.8, 7.7]	11.1% [7.7, 15.7]	9.3% [7.1, 12.1]
10th	13.1% [10.7, 15.9]	7.3% [4.3, 12.2]	4.6% [2.7, 7.6]	11.6% [9.6, 13.9]	18.3% [14.7, 22.4]
11th	14.5% [12.7, 16.5]	11.3% [8.2, 15.3]	10.3% [5.2, 19.4]	14.9% [12.2, 18.1]	15.9% [12.7, 19.7]
12th	17.1% [14.9, 19.6]	8.0% [5.4, 11.8]	11.7% [7.3, 18.1]	18.0% [14.5, 22.2]	20.6% [18.1, 23.3]
Total	9.6% [8.9, 10.4]	6.9% [5.5, 8.6]	7.1% [5.6, 8.8]	9.7% [8.5, 11.0]	11.2% [10.0, 12.4]

Note: Brackets contain the 95 percent confidence intervals.

Figure 2.2 Current Cigarette Use

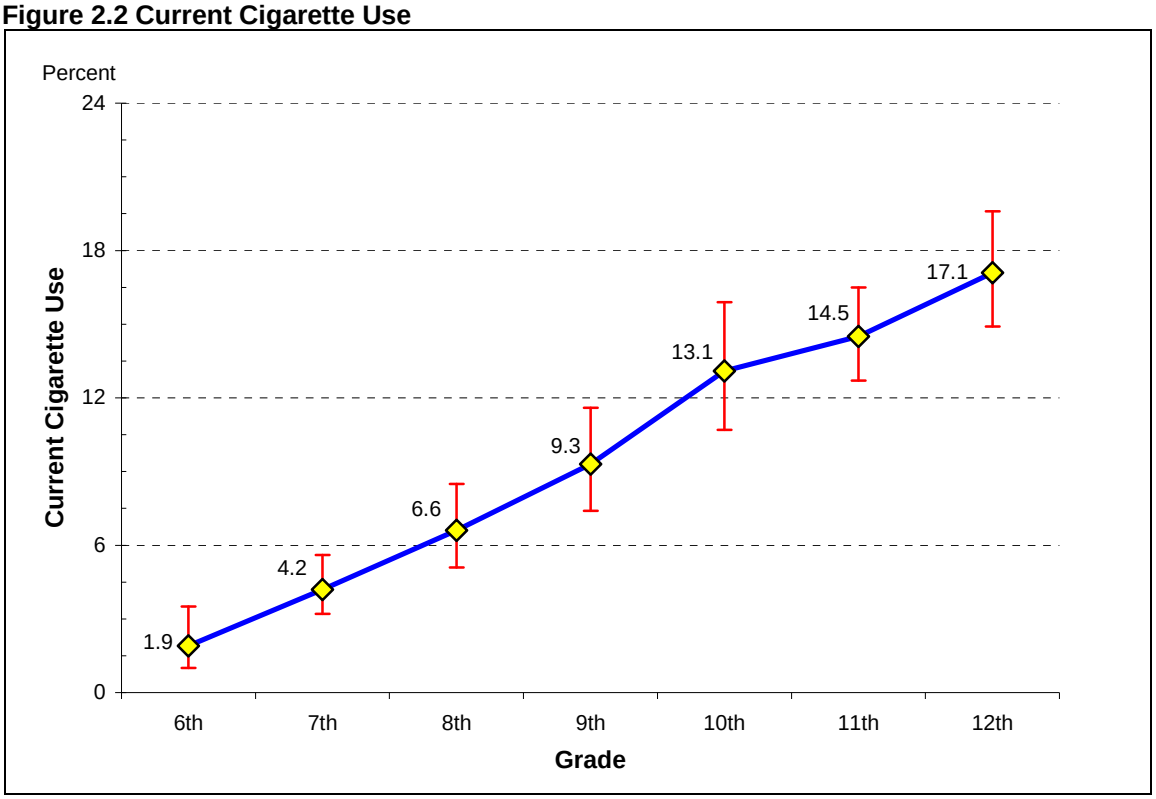


Table 2.4 Current Cigarette Use by Grade and Gender

Grade	Overall	Female	Male
6th	1.9%	1.8%	1.8%
	[1.0, 3.5]	[0.9, 3.7]	[0.7, 4.8]
7th	4.2%	2.7%	5.6%
	[3.2, 5.6]	[2.0, 3.7]	[3.7, 8.4]
8th	6.6%	6.2%	7.0%
	[5.1, 8.5]	[4.6, 8.3]	[5.1, 9.4]
9th	9.3%	8.9%	9.5%
	[7.4, 11.6]	[6.8, 11.6]	[7.3, 12.3]
10th	13.1%	12.8%	13.3%
	[10.7, 15.9]	[8.5, 18.8]	[11.6, 15.2]
11th	14.5%	11.9%	17.1%
	[12.7, 16.5]	[10.0, 14.0]	[14.6, 19.8]
12th	17.1%	14.8%	19.4%
	[14.9, 19.6]	[12.2, 17.8]	[16.4, 22.9]
Total	9.6%	8.7%	10.6%
	[8.9, 10.4]	[7.7, 9.8]	[9.5, 11.7]

Note: Brackets contain the 95 percent confidence intervals.

When asked about current smoking on school property, prevalence of cigarette use again increased monotonically with age, but less than half of the smokers reported that they smoked cigarettes on school property during the past 30 days (30.6 percent).

Frequent Use of Cigarettes

Frequent use of cigarettes is one of the characteristics of tobacco addiction. Respondents who reported smoking on 20 or more days during the past 30 days were defined as frequent users of cigarettes. **Table 2.5** and **Figure 2.3** show that less than two percent of California adolescents reported frequent smoking prior to high school entry. Increases in frequent smoking were particularly salient in grade 11 (3.2 percent) and 12 (4.5 percent), especially for Caucasians. Caucasians reported increased prevalence of frequent smoking relative to all other major ethnic groups beginning in grade nine and persisting through all high school years. In grade 12, for instance, 6.8 percent of Caucasians reported frequent smoking. No other ethnic group reported a frequent smoking prevalence rate that exceeded 3.2 percent in 12th grade. Boys reported higher frequent smoking rates than girls did in the 12th grade (2.5 percent vs. 1.4 percent, $p < .05$) (**Table 2.6**). Significant gender differences were found in 6th, 8th, 10th, and 11th grade respondents.

Table 2.5 Frequent Cigarette Use (20+ days), by Grade and Ethnicity

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	0.6% [0.2, 2.4]	3.9% [0.6, 23.4]	1.0% [0.1, 6.9]	0.1% [0.0, 0.4]	0.1% [0.0, 1.1]
7th	0.3% [0.1, 0.6]	0.3% [0.1, 1.6]	0.0% —	0.1% [0.0, 0.6]	0.3% [0.1, 0.7]
8th	1.3% [1.0, 1.7]	1.3% [0.6, 2.8]	0.8% [0.3, 2.5]	1.2% [0.7, 2.2]	1.6% [1.1, 2.5]
9th	1.6% [1.1, 2.3]	1.1% [0.3, 3.6]	0.7% [0.2, 3.1]	0.5% [0.2, 1.2]	2.9% [1.8, 4.8]
10th	2.2% [1.6, 3.1]	1.3% [0.5, 3.2]	1.1% [0.4, 3.0]	1.8% [1.0, 3.1]	3.2% [2.0, 5.0]
11th	3.2% [2.5, 4.1]	2.3% [1.0, 5.0]	2.3% [1.1, 4.8]	1.5% [0.9, 2.5]	5.3% [3.9, 7.3]
12th	4.5% [3.8, 5.4]	3.1% [1.7, 5.6]	2.6% [1.1, 5.9]	2.5% [1.4, 4.2]	6.8% [5.2, 9.0]
Total	2.0% [1.7, 2.3]	2.0% [1.1, 3.6]	1.2% [0.7, 2.0]	1.0% [0.8, 1.4]	3.1% [2.5, 3.8]

Note: Brackets contain the 95 percent confidence intervals.

Figure 2.3 Frequent Cigarette Use

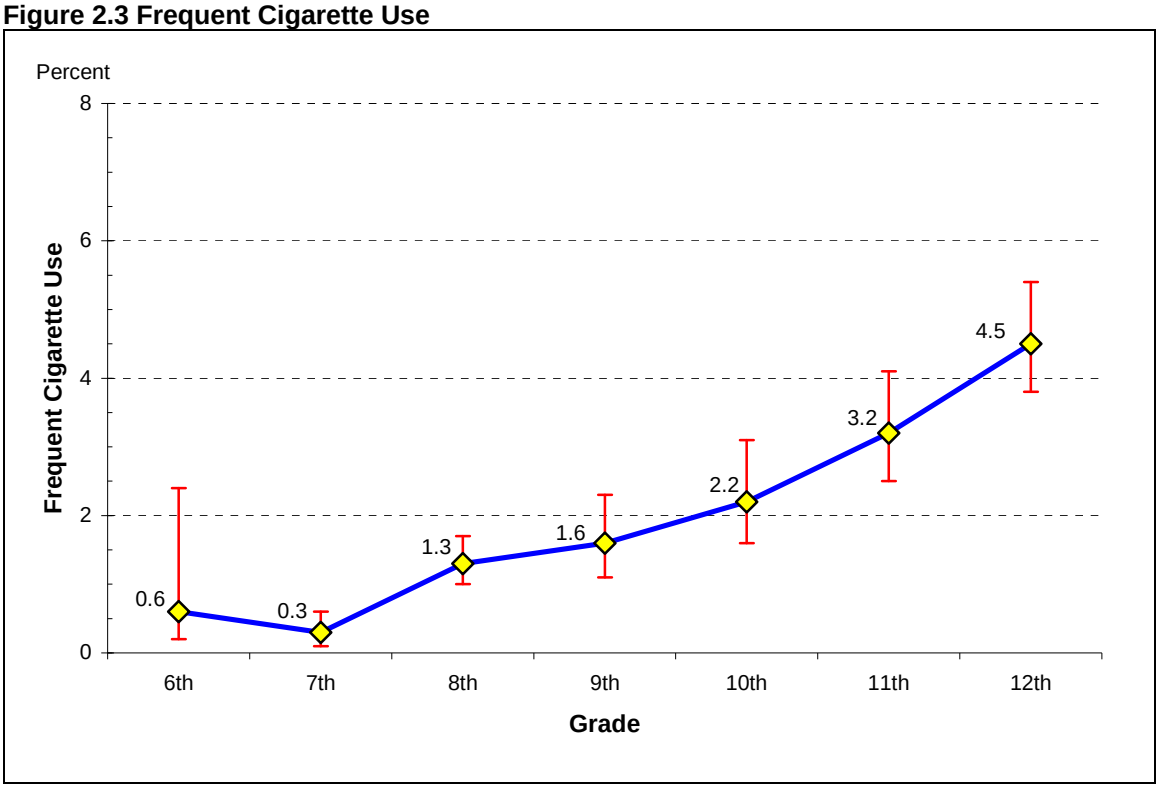


Table 2.6 Frequent cigarette use (20+ days) by Grade and Gender

Grade	Overall	Female	Male
6th	0.6%	0.1%	1.1%
	[0.2, 2.4]	[0.0, 0.3]	[0.2, 4.8]
7th	0.3%	0.4%	0.2%
	[0.1, 0.6]	[0.1, 1.2]	[0.1, 0.5]
8th	1.3%	0.7%	1.9%
	[1.0, 1.7]	[0.4, 1.1]	[1.3, 2.8]
9th	1.6%	1.3%	1.8%
	[1.1, 2.3]	[0.7, 2.6]	[1.2, 2.8]
10th	2.2%	1.3%	3.1%
	[1.6, 3.1]	[0.9, 1.8]	[2.0, 4.8]
11th	3.2%	2.3%	4.2%
	[2.5, 4.1]	[1.6, 3.3]	[3.0, 5.7]
12th	4.5%	3.6%	5.3%
	[3.8, 5.4]	[2.6, 5.0]	[3.9, 7.3]
Total	2.0%	1.4%	2.5%
	[1.7, 2.3]	[1.1, 1.7]	[2.1, 3.1]

Note: Brackets contain the 95 percent confidence intervals.

Lifetime Use of 100 Cigarettes or More

A convention has emerged in the field of youth tobacco use surveillance, which states that a history of having smoked at least 100 cigarettes distinguishes youth who smoke just a few cigarettes ("experimenters"), presumably out of curiosity, from those youth who smoke enough cigarettes to become habitual smokers (Delnevo et al., 2004). **Figure 2.4** illustrates that the prevalence of youth smokers who had smoked at least 100 cigarettes remained below two percent among respondents through grade 8, then accelerated to 8.9 percent by grade 12. Overall, 3.5 percent of respondents indicated that they had smoked at least 100 cigarettes.

The pattern by ethnic group affiliation described in **Table 2.7** resembled the pattern characterizing ethnicity with respect to prevalence of frequent smoking. Throughout the high school grades, Caucasian respondents reported a higher prevalence of having smoked at least 100 cigarettes than respondents associated with any other major ethnic group. By grade 12, 13.3 percent of Caucasian respondents reported having smoked at least 100 cigarettes, compared to a maximum of 6.4 percent for any other major ethnic group. The pattern observed between girls and boys in **Table 2.8** suggested a consistent excess prevalence of having smoked 100 cigarettes in boys relative to girls, in grades 6, 8, 11, and 12 ($p < .05$).

Figure 2.4 Lifetime 100+ Cigarette Use

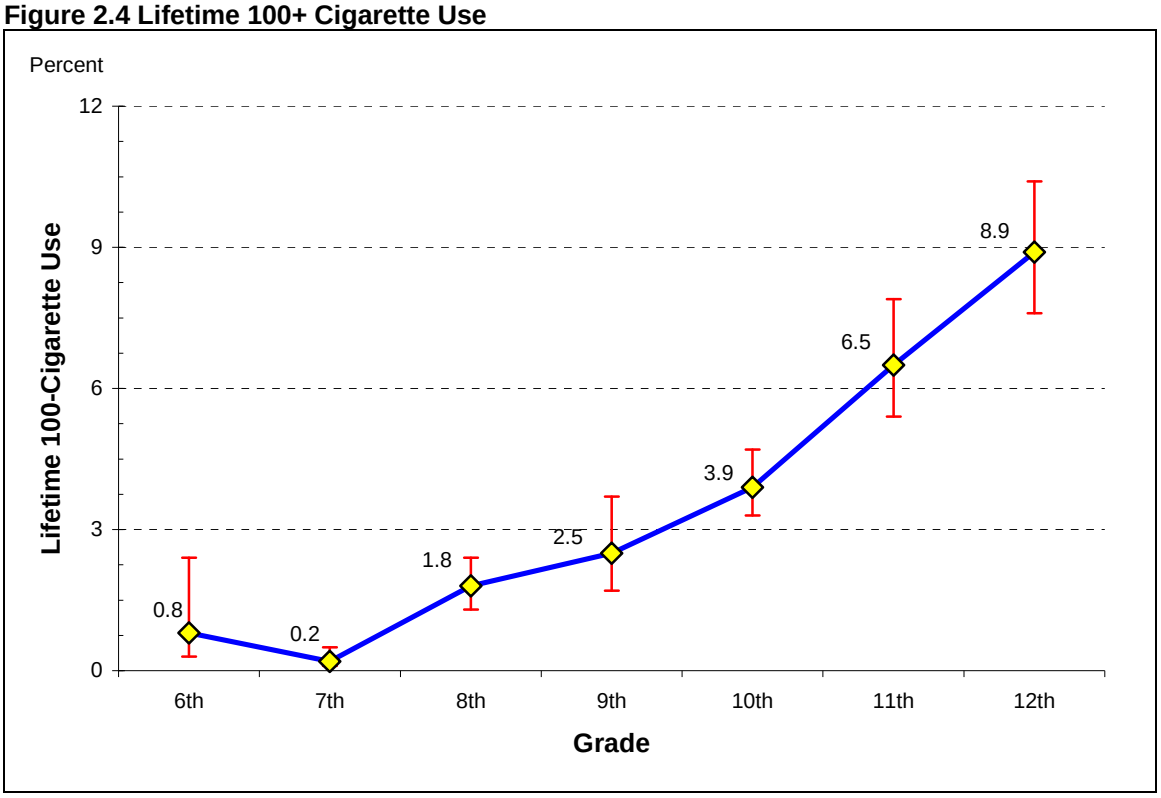


Table 2.7 Lifetime Use of 100 Cigarettes or More by Grade and Ethnicity

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	0.8% [0.3, 2.4]	3.8% [0.5, 22.7]	1.2% [0.2, 5.8]	0.3% [0.1, 1.5]	0.4% [0.1, 1.4]
7th	0.2% [0.1, 0.5]	0.4% [0.1, 1.7]	0.0% —	0.2% [0.1, 0.6]	0.4% [0.2, 0.9]
8th	1.8% [1.3, 2.4]	1.6% [0.8, 3.2]	1.1% [0.4, 3.0]	2.1% [1.1, 4.0]	1.5% [1.0, 2.3]
9th	2.5% [1.7, 3.7]	0.3% [0.0, 2.5]	1.4% [0.5, 4.1]	2.3% [0.8, 6.8]	3.6% [2.4, 5.4]
10th	3.9% [3.3, 4.7]	2.3% [1.2, 4.5]	3.0% [1.5, 5.8]	2.4% [1.6, 3.7]	6.2% [4.9, 7.8]
11th	6.5% [5.4, 7.9]	7.1% [4.5, 11.1]	2.5% [1.2, 5.4]	3.8% [2.7, 5.3]	9.8% [7.8, 12.3]
12th	8.9% [7.6, 10.4]	4.7% [2.9, 7.6]	3.2% [1.6, 6.4]	6.4% [4.9, 8.4]	13.3% [11.0, 16.1]
Total	3.5% [3.1, 4.0]	3.1% [2.1, 4.5]	1.8% [1.2, 2.6]	2.4% [1.9, 2.9]	5.4% [4.6, 6.3]

Note: Brackets contain the 95 percent confidence intervals.

Table 2.8 Lifetime Use of 100 Cigarettes or More by Grade and by Gender

Grade	Overall	Female	Male
6th	0.8%	0.1%	1.4%
	[0.3, 2.4]	[0.0, 0.4]	[0.4, 4.7]
7th	0.2%	0.2%	0.3%
	[0.1, 0.5]	[0.1, 0.6]	[0.1, 0.6]
8th	1.8%	1.1%	2.4%
	[1.3, 2.4]	[0.7, 1.7]	[1.6, 3.7]
9th	2.5%	2.4%	2.6%
	[1.7, 3.7]	[1.5, 3.9]	[1.7, 4.1]
10th	3.9%	2.7%	5.0%
	[3.3, 4.7]	[2.1, 3.5]	[3.9, 6.5]
11th	6.5%	4.3%	8.6%
	[5.4, 7.9]	[3.3, 5.6]	[6.9, 10.7]
12th	8.9%	7.0%	10.7%
	[7.6, 10.4]	[5.7, 8.5]	[8.7, 13.2]
Total	3.5%	2.6%	4.5%
	[3.1, 4.0]	[2.3, 2.9]	[3.8, 5.2]

Note: Brackets contain the 95 percent confidence intervals.

Use of Other Tobacco Products

Although cigarette smoking is the primary way that adolescents use tobacco, they gain significant exposure to tobacco through the use of smokeless tobacco, cigars, and specialty tobacco imports such as bidis or kreteks.

Eight percent of respondents reported ever using smokeless tobacco (chewing tobacco, snuff, or dip), and 24.1 percent reported smoking cigars. Less than six percent of respondents admitted that they had tried smoking bidis (5.7 percent) or kreteks (5.5 percent). African Americans reported a higher prevalence rate of lifetime bidi use (8.6 percent), and Caucasians reported a higher rate of lifetime smokeless tobacco (9.1 percent) and kretek use (6.8 percent).

High school respondents reported higher rates of smoking cigars (11.1 percent) and smokeless tobacco (3.1 percent) in the past 30 days than middle school respondents did (4.7 percent and 2.0 percent). The highest prevalence of current smokeless tobacco use by girls was 3.2 percent in grade 9; the range in prevalence rates for boys in the high school grades was 3.4 percent to 5.9 percent. While girls' current cigar use in grades seven through nine was as prevalent as boys' current cigar use, their prevalence peaked at 8.8 percent. By contrast, the boys' prevalence of current cigar use rose from 11.4 percent in grade 9 to 17.7 percent in grade 12. Consistent with past literature (e.g., CDC, 2001), girls were less likely than boys to report current use of smokeless tobacco or cigars, and lifetime use of such tobacco products as smokeless tobacco, cigars, bidis, and kreteks.

Regional Differences in Tobacco Use

There is increasing interest in understanding geographic variations in the prevalence of tobacco use (Brown and Duncan, 2000). Tobacco use has recently been shown to vary by the urbanicity of a region, with rural areas reporting the highest rates of tobacco use (CDC, 2002). The CSTS design included stratification by 12 demographically distinct regions in California, with regions 9 (rural Central Valley region of California) and 10 (20 most northern sparsely populated counties) being less urban than other regions. Seven of the regions represented single counties (Alameda, Los Angeles, Orange, Riverside, San Bernardino, Santa Clara, and San Diego). The remaining five regions represented from 5 to 20 counties each. **Table 2.9** shows the prevalence rate for lifetime smoking, current smoking, and current smokeless tobacco use by California region.

Table 2.9 Lifetime, Current Cigarette Smoking, and Current Smokeless Tobacco Use by Region

Region/County or Area	Lifetime	Current	Current Smokeless
1/Los Angeles	31.9% [26.0, 38.4]	9.0% [7.3, 11.2]	2.0% [1.0, 4.0]
2/San Diego	33.7% [29.1, 38.5]	10.7% [8.8, 12.8]	2.5% [1.5, 4.0]
3/Orange	32.8% [26.5, 39.8]	11.2% [7.7, 16.1]	3.0% [1.4, 6.2]
4/Santa Clara	27.8% [23.4, 32.7]	7.7% [5.4, 10.7]	2.2% [1.4, 3.5]
5/San Bernardino	32.3% [28.0, 36.9]	8.0% [6.6, 9.6]	1.9% [1.3, 2.8]
6/Riverside	35.8% [31.5, 40.4]	10.6% [8.8, 12.9]	2.5% [1.4, 4.4]
7/Alameda	31.5% [27.9, 35.3]	8.3% [6.4, 10.8]	1.9% [1.2, 2.8]
8/Bay Area Counties	33.5% [28.0, 39.5]	9.5% [8.0, 11.2]	3.0% [2.1, 4.1]
9/Central Valley Counties	40.7% [37.1, 44.3]	10.4% [8.9, 12.3]	3.7% [2.3, 5.9]
10/Northern Counties	33.8% [30.4, 37.5]	10.6% [8.9, 12.6]	5.0% [3.1, 8.0]
11/Sacramento Area Counties	36.2% [29.2, 43.8]	10.0% [7.3, 13.5]	3.7% [1.9, 7.2]
12/Central Coasts Counties	33.2% [29.5, 37.0]	9.5% [8.0, 11.2]	2.0% [1.3, 2.9]
Overall	33.6% [31.5, 35.7]	9.6% [8.9, 10.4]	2.7% [2.2, 3.3]

Note: Brackets contain the 95 percent confidence intervals.

For prevalence of lifetime smoking, no consistent pattern was apparent, although the highest prevalence of lifetime smoking (40.7 percent) did occur in region nine (Central Valley region of California). For current smoking, no discernable consistent pattern emerged. The highest prevalence of current smoking (11.2 percent) occurred in region three, Orange County. This prevalence rate was not significantly different from the rates

observed in such urbanized areas as the Sacramento Area Counties (10.0 percent) or San Diego (10.7 percent), nor was it different from the rates observed in the two less urbanized areas, namely, the Central Valley Counties (10.4 percent), and Northern Counties (10.6 percent).

For current smokeless tobacco use, more discernable patterns did emerge by region. The highest rates occurred in the more inland regions, including the Central Valley (3.7 percent), the mostly inland northern counties (5.0 percent) and the Sacramento area (3.7 percent). By contrast, the lowest rates occurred in the coastal regions, especially the urbanized areas, including Los Angeles (2.0 percent) and Alameda (1.9 percent), but also including San Bernardino County (1.9 percent).

Trends in Tobacco Use

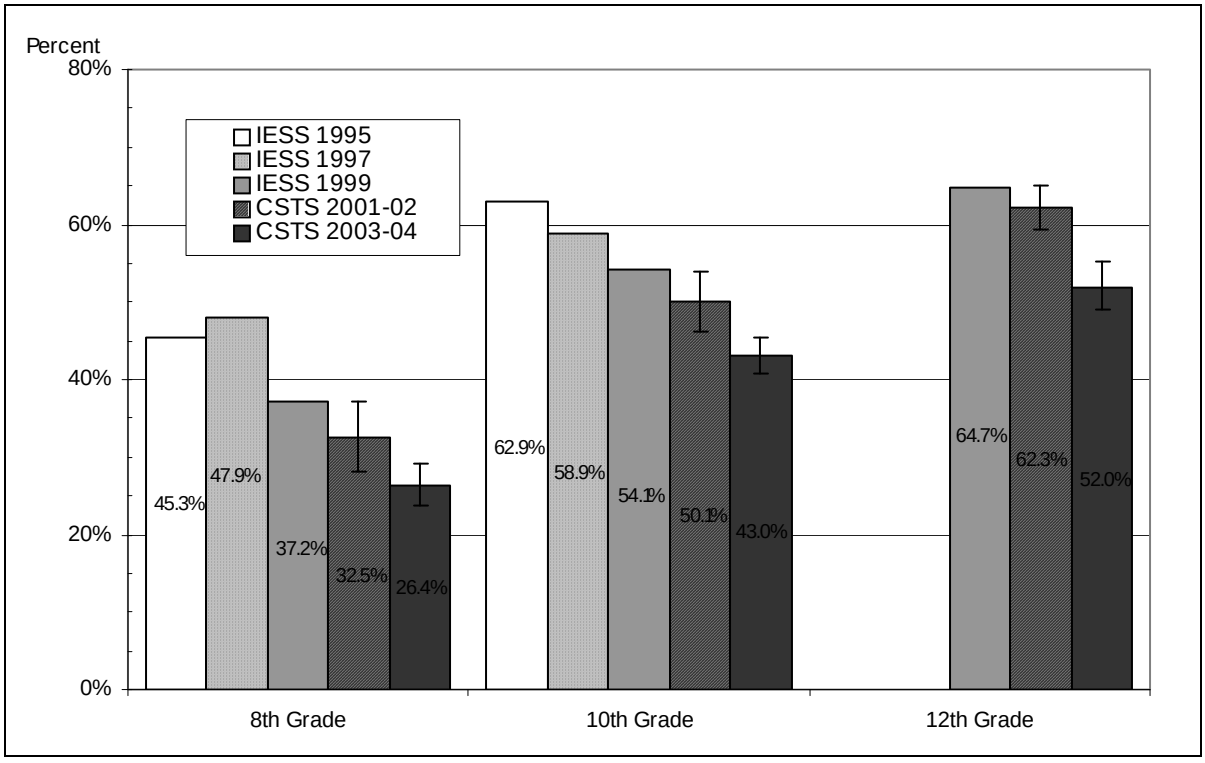
Trends in lifetime and current tobacco use were assessed using the IESS 1995-1996, 1997-1998, 1999-2000, CSTS 2001-2002, and CSTS 2003-2004 data. Overall, decreasing trends of prevalence rates of lifetime cigarette, cigar, and bidi use were shown for 8th, 10th, and 12th grade California students (**Table 2.10**). Rates of lifetime cigarette smoking declined from 45.3 percent in 1995 to 26.4 percent in 2003 for 8th graders, 62.9 percent to 43.0 percent for 10th graders, and 64.7 percent in 1999 to 52.0 percent in 2003 for 12th graders (**Figure 2.5**) (all differences between 1995 and 2003-2004 significant, $p < 0.01$). The declines were statistically significant for 8th grade ($p<.05$) and 10th grade ($p<.01$) students. Lifetime cigar use declined with some fluctuations, only 10th grade had a significant decline from 38.7 percent in 1995 to 29.7 percent in 2003 ($p<.05$). Table 2.10 suggests that CSTS 2003-2004 respondents reported lower rates of bidi use than their predecessor IESS 1999-2000 cohort ($p < .01$ for 10th and 12th graders only). The pattern of decline was less pronounced (not statistically significant) in lifetime smokeless tobacco use from 1995 to 2003-2004.

Table 2.10 Trends in Tobacco Use

	Cigarette		Smokeless Tobacco		Cigar		Bidi
	Lifetime	**Current**	**Lifetime**	**Current**	**Lifetime**	**Current**	**Lifetime**
8th Grade							
IESS 1995	45.3%	16.9%	5.9%	3.1%	27.7%	n/a	n/a
IESS 1997	47.9%	17.1%	8.0%	4.2%	29.2%	10.8%	n/a
IESS 1999	37.2%	11.7%	6.1%	3.0%	20.0%	6.2%	n/a
CSTS 2001-02	32.5%	6.4%	9.6%	2.4%	20.5%	5.4%	4.2%
CSTS 2003-04	26.4%**	6.6%**	6.8%	2.5%	19.1%**	6.6%**	4.7%
10th Grade							
IESS 1995	62.9%	27.8%	9.7%	3.5%	38.7%	n/a	n/a
IESS 1997	58.9%	21.8%	9.3%	2.9%	37.4%	13.2%	n/a
IESS 1999	54.1%	19.5%	8.3%	2.9%	30.6%	9.0%	13.9%
CSTS 2001-02	50.1%	14.8%	11.9%	3.6%	31.4%	9.8%	9.6%
CSTS 2003-04	43.0%**	13.1%**	10.4%	3.5%	29.7%**	11.4%	7.8%**
12th Grade							
IESS 1995	n/a	n/a	n/a	n/a	n/a	n/a	n/a
IESS 1997	n/a	n/a	n/a	n/a	n/a	n/a	n/a
IESS 1999	64.7%	24.8%	12.1%	3.5%	39.2%	10.4%	26.3%
CSTS 2001-02	62.3%	22.9%	15.7%	3.5%	45.3%	13.9%	17.7%
CSTS 2003-04	52.0%**	17.1%**	10.7%	3.4%	36.7%*	12.8%**	8.2%**

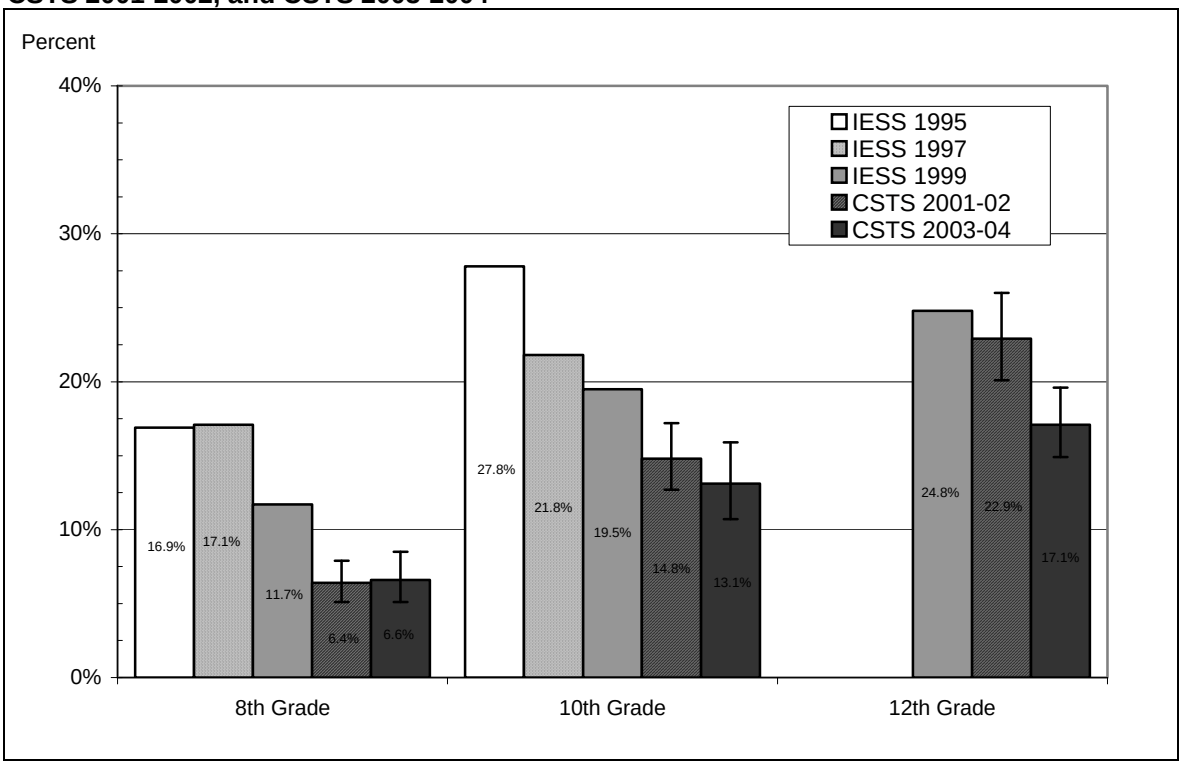
Note: IESS 1995-1999 are the Independent Evaluations.
CSTS 2001-2002 and 2003-2004 are the CA Student Tobacco Survey.
n/a = question not asked of respondent type
* $p < 0.05$; ** $p < 0.01$
Within each grade group for each outcome variable, year 2003 is compared to year 1995 for statistical significance, except where 1995-1999 data were unavailable, the first available year is used in comparison to year 2003.

Figure 2.5 Lifetime Cigarette Use: Trends based on IESS 1995-1996, 1997-1998, 1999-2000 and CSTS 2001-2002.



A similar pattern in trends was found in current tobacco use (**Table 2.10**). **Figure 2.6** indicates that current cigarette use has declined in grade 8 (from 16.9 percent to 6.6 percent), grade 10 (from 27.8 percent to 13.1 percent), and grade 12 (from 24.8 percent to 17.1 percent). Prevalence rates of using smokeless tobacco during the past 30 days stayed level. Rates of current cigar use declined among 8th and 10th graders. An increased rate of current cigar use was observed for 12th graders (from 10.4 percent to 12.8 percent).

Figure 2.6 Current Cigarette Use: Trends based on IESS 1995-1996, 1997-1998, 1999-2000, CSTS 2001-2002, and CSTS 2003-2004



Comparison of Concurrent In-school Surveys

The NYTS is a national random sample survey that was conducted in 2002 by the American Legacy Foundation specific to youth tobacco surveillance, using many of the same tobacco use items as were used in the CSTS. The California Attorney General's California Student Survey (CSS) is a survey on drug abuse conducted biennially by the California Attorney General in randomly selected California schools surveying students in grades 7, 9, and 11. The tenth administration of the CSS occurred concurrently with the administration of the 2003-2004 CSTS. The 2003 CSS included commonly asked questions about tobacco use, including questions about lifetime smoking, lifetime smokeless tobacco use, current cigarette smoking, frequent smoking, and current smokeless tobacco use. This chapter examines prevalence rates of tobacco use obtained in these surveys.

Table 2.11 shows that prevalence rates for lifetime cigarette use obtained in the CSTS were nearly identical to those in the CSS, while rates for lifetime smokeless tobacco use were slightly higher for 7th and 9th graders than rates obtained in the CSS. Prevalence estimates for current cigarette use and smokeless tobacco use were presented in **Table 2.12**. Prevalence estimates of these smoking measures were similar in the two surveys, except for the CSTS registering slightly higher current smokeless tobacco rates among 9th graders than those observed in the CSS. Nearly identical prevalence rates were observed for frequent smoking as well, as presented in **Table 2.13**. Both surveys

yielded comparable estimates for each of the tobacco use questions, providing evidence of measurement reliability.

The CSTS prevalence estimates of current cigarette smoking, cigar, and smokeless tobacco use were compared to the corresponding rates observed in the NYTS (Table 2.12). Prevalence rates of current cigarette smoking in the CSTS were 42 to 61 percent lower than the corresponding rates in the NYTS for middle and high school students, respectively. Similar but less pronounced differences were observed for current cigar use and current smokeless tobacco use, except for high school cigar use, where the CSTS prevalence rate was insignificantly lower.

Table 2.11 Comparison of Surveys: Lifetime Tobacco Use

	Cigarette		Smokeless Tobacco	
Grade	**CSTS[1] 2003-2004**	**CSS[2] 2003-2004**	**CSTS[1] 2003-2004**	**CSS[2] 2003-2004**
6th	9.4% [7.6, 11.7]	—	4.7% [3.6, 6.2]	—
7th	16.8% [14.4, 19.6]	16.6% [13.1, 20.0]	6.2% [5.0, 7.8]	1.7% [1.2, 2.1]
8th	26.4% [23.7, 29.2]	—	6.8% [5.5, 8.3]	—
9th	35.3% [29.0, 42.2]	35.1% [32.3, 38.0]	7.8% [6.3, 9.5]	4.5% [3.2, 5.7]
10th	43.0% [40.7, 45.3]	—	10.4% [8.5, 12.5]	—
11th	47.8% [44.9, 50.7]	45.5% [41.9, 49.2]	8.6% [7.4, 10.0]	7.7% [6.2, 9.3]
12th	52.0% [49.0, 55.1]	—	10.7% [8.5, 13.2]	—

Note: Brackets contain the 95 percent confidence intervals.
[1] California Student Tobacco Survey.
[2] California Attorney General's CA Student Survey, designed to measure reported drug use by in-school students, including tobacco.

Table 2.12 Comparison of Surveys: Current Tobacco Use

Grade	Cigarette			Cigar			Smokeless Tobacco		
	CSTS[1] 2003-04	CSS[2] 2003-04	NYTS[3] 2002	CSTS 2003-04	CSS 2003-04	NYTS 2002	CSTS 2003-04	CSS 2003-04	NYTS 2002
6th	1.9% [1.0, 3.5]	—	—	3.4% [2.2, 5.4]	—	—	1.7% [0.9, 3.5]	—	—
7th	4.2% [3.2, 5.6]	4.9% [3.4, 6.5]	—	4.5% [3.4, 6.0]	—	—	1.9% [1.2, 3.2]	1.6% [0.8, 2.4]	—
8th	6.6% [5.1, 8.5]	—	—	6.6% [5.1, 8.4]	—	—	2.5% [1.7, 3.6]	—	—
9th	9.3% [7.4, 11.6]	10.4% [9.0, 11.9]	—	8.8% [7.1, 10.9]	—	—	2.8% [1.9, 4.3]	1.7% [1.0, 2.4]	—
10th	13.1% [10.7, 15.9]	—	—	11.4% [9.4, 13.7]	—	—	3.5% [2.5, 4.9]	—	—
11th	14.5% [12.7, 16.5]	14.9% [12.5, 17.3]	—	11.9% [10.4, 13.5]	—	—	2.8% [2.1, 3.8]	2.8% [1.9, 3.7]	—
12th	17.1% [14.9, 19.6]	—	—	12.8% [11.1, 14.6]	—	—	3.4% [2.4, 4.8]	—	—
Middle School	3.9% [3.1, 5.0]	—	10.1% [8.9, 11.3]	4.7% [3.6, 6.1]	—	6.0% [5.3, 6.7]	2.0% [1.4, 2.9]	—	3.7% [2.9, 4.5]
High School	13.2% [12.4, 14.1]	—	22.9% [21.3, 24.5]	11.1% [10.4, 11.8]	—	11.6% [10.7, 12.5]	3.1% [2.5, 3.9]	—	6.1% [5.0, 7.2]

Note: Brackets contain the 95 percent confidence intervals.
[1] California Student Tobacco Survey.
[2] California Attorney General's CA Student Survey, designed to measure reported drug use by in-school students, including tobacco.
[3] National Youth Tobacco Survey, funded by the Legacy Foundation and conducted in conjunction with the Centers for Disease Control.

Table 2.13 Comparison of Surveys: Frequent Cigarette Use (20+ days)

Grade	CSTS[1] 2003-2004	CSS[2] 2003-2004
6th	0.6% [0.2, 2.4]	—
7th	0.3% [0.1, 0.6]	0.3% [0.1, 0.4]
8th	1.3% [1.0, 1.7]	—
9th	1.6% [1.1, 2.3]	1.2% [0.7, 1.7]
10th	2.2% [1.6, 3.1]	—
11th	3.2% [2.5, 4.1]	3.2% [2.2, 4.1]
12th	4.5% [3.8, 5.4]	—

Note: Brackets contain the 95 percent confidence intervals.
[1] California Student Tobacco Survey.
[2] California Attorney General's CA Student Survey, designed to measure reported drug use by in-school students, including tobacco.

Age of Smoking Initiation

Cigarette smoking during adolescence has been shown to be associated with a greater probability of concurrent and future substance use and abuse (Kandel et al., 1997; Brown et al., 1996; Kandel and Yamaguchi, 1993). Research has shown that adolescents who start smoking at an earlier age are more likely to persist in smoking, and become more dependent on nicotine than other youth populations, and early experimentation increases the likelihood of habitual smoking. (USDHHS, 1998; USDHHS, 1994; Kandel et al., 1997).

Age of cigarette smoking initiation was measured in the CSTS by asking "How old were you when you smoked a whole cigarette for the first time?" Fifty six percent of lifetime smokers reported that they started smoking a whole cigarette after age 13 (**Table 2.14**). Approximately one fifth of lifetime smokers indicated that they started smoking when they were ten years old or younger. Boys started smoking at an earlier age than girls did ($p < .05$). Forty-nine percent of boys smoked a whole cigarette before age 13, while 38.6 percent of girls in this age group did so. Patterns of smoking initiation differed between African Americans and other ethnic groups when age of smoking initiation was examined across the major ethnic groups. More than one half of Asian/Pacific Islander, Hispanic, and Caucasian smokers reported that they started smoking after age 13. More than a third of African American smokers started smoking when they were ten years old or younger.

Table 2.14 Age of Cigarette Smoking Initiation Among Lifetime Smokers

	10 Years old or Younger	11 or 12 Years Old	13 or 14 Years Old	15 Years Old or Older
Overall	22.3% [20.0, 24.8]	22.0% [20.3, 23.9]	32.1% [29.0, 35.5]	23.6% [21.6, 25.7]
Gender				
Female	16.8% [13.6, 20.6]	21.8% [18.9, 25.1]	37.2% [32.1, 42.7]	24.2% [21.1, 27.5]
Male	27.0% [24.3, 29.9]	22.1% [20.2, 24.2]	27.9% [25.5, 30.4]	23.0% [21.1, 25.0]
Ethnicity				
Asian/PI	24.1% [19.0, 30.2]	21.3% [17.5, 25.7]	33.0% [24.6, 42.7]	21.5% [14.6, 30.6]
African American	37.4% [25.0, 51.8]	17.7% [12.4, 24.7]	32.2% [19.6, 48.0]	12.7% [8.6, 18.2]
Hispanic/Latino(a)	23.5% [20.2, 27.3]	25.0% [22.0, 28.3]	28.7% [25.4, 32.3]	22.8% [19.8, 26.0]
Caucasian	16.7% [13.0, 21.0]	19.7% [17.2, 22.5]	35.8% [30.7, 41.3]	27.8% [25.0, 30.8]

Note: Brackets contain the 95 percent confidence intervals.

Intent Not to Use Cigarettes

Intent not to use cigarettes in the near future and beliefs about refusing to use tobacco if a friend offered a tobacco product to them are two protective factors relating to future tobacco use. (Pierce et al., 1996). The CSTS assessed respondents' intent not to use by asking "Do you think you will smoke a cigarette at any time during the next year?" and "If one of your best friends offered you a cigarette, would you smoke it?" Response options were "Definitely yes", "Probably yes", "Probably not", and "Definitely not".

Seventy-eight percent of middle school students and 58.6 percent of high school students responded that they "definitely would not" smoke a cigarette in the next year. As can be seen in **Table 2.15**, these numbers mirrored the responses to the question asking if they would smoke a cigarette if their best friend offered it (77.1 percent and 60.2 percent for middle and high school students, respectively, reported "definitely not"). The responses were similar across gender and ethnic groups.

Table 2.15 Intent Not to Smoke

	Do you think you will smoke a cigarette at any time during the next year? (% Responding "Definitely Not")	If one of your best friends offered you a cigarette, would you smoke it? (% Responding "Definitely Not")
Middle School		
Overall	78.1% [76.2, 79.9]	77.0% [74.8, 79.1]
Female	79.0% [76.3, 81.4]	77.8% [74.9, 80.6]
Male	77.3% [74.5, 79.8]	76.2% [72.9, 79.3]
Asian/PI	80.9% [75.8, 85.1]	83.3% [78.4, 87.2]
African American	73.7% [68.5, 78.4]	65.6% [55.4, 74.6]
Hispanic/Latino(a)	75.7% [72.8, 78.3]	74.9% [71.7, 77.9]
Caucasian	80.8% [79.2, 82.4]	80.5% [78.7, 82.2]
High School		
Overall	58.6% [56.9, 60.2]	60.2% [58.4, 62.0]
Female	58.4% [55.7, 61.0]	60.5% [57.8, 63.1]
Male	58.7% [56.7, 60.7]	60.0% [57.7, 62.2]
Asian/PI	70.5% [67.3, 73.5]	69.5% [66.4, 72.5]
African American	71.1% [66.3, 75.5]	71.0% [64.8, 76.4]
Hispanic/Latino(a)	51.8% [48.8, 54.8]	54.8% [52.6, 57.1]
Caucasian	58.1% [56.2, 60.0]	59.9% [58.3, 61.4]

Note: Brackets contain the 95 percent confidence intervals.

Desire to Quit and Quit Attempts

Previous research found that adolescents' desire to quit smoking cigarettes and prior quit attempts had contributed to quitting cigarette use in the future. Smokers with less desire to quit perceived smoking to provide greater benefits (e.g., believed that smokers had more friends; smoking makes young people look cool) than current smokers with greater desire to quit, and thus were found to report more difficulty in quitting (Friestad

and Rise, 1998; Tyc, Hadley, and Allen, 2004). Students were asked if they wanted to quit smoking. At least a third of current smokers in each grade, except for 6th grade, reported that they wanted to quit smoking (**Table 2.16**). The rates were slightly higher for students in grades 7, 9, and 12. No consistent patterns emerged when rates were examined by ethnicity. When asked if they thought they would be able to quit smoking cigarettes if they wanted to, about two thirds of current smokers in grades 8 through 12 responded "yes" (**Table 2.17**). Similar to those who wanted to quit smoking, 49.8 percent of lifetime smokers (**Table 2.18**) and 47.8 percent of current smokers (**Table 2.19**) had made at least one attempt to quit smoking cigarettes. Current male smokers reported a higher rate of quitting smoking at least once compared to female smokers (56.4 percent vs. 46.8 percent, respectively) ($p < 0.05$). No significant gender difference in previous quit attempts was observed among lifetime smokers.

Table 2.16 Percent of Current Smokers Reporting Desire to Stop Smoking

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	18.5%	4.2%	20.7%	21.4%	28.1%
	[8.6, 35.3]	[0.3, 37.7]	[2.9, 69.7]	[8.4, 44.7]	[3.1, 82.8]
7th	47.0%	44.2%	45.8%	58.6%	30.7%
	[27.2, 67.9]	[22.2, 68.7]	[9.2, 87.6]	[35.8, 78.2]	[16.2, 50.2]
8th	36.4%	51.5%	36.3%	35.0%	35.0%
	[28.2, 45.5]	[30.9, 71.6]	[14.3, 66.1]	[25.9, 45.5]	[23.6, 48.6]
9th	37.6%	46.3%	11.8%	36.4%	41.9%
	[29.8, 46.1]	[27.4, 66.4]	[2.4, 41.8]	[23.5, 51.6]	[32.0, 52.5]
10th	33.5%	26.9%	15.0%	30.1%	36.7%
	[26.2, 41.6]	[14.8, 43.8]	[4.4, 40.3]	[18.2, 45.5]	[25.2, 50.0]
11th	35.3%	19.4%	39.9%	41.3%	33.7%
	[29.8, 41.2]	[10.1, 34.0]	[11.2, 77.9]	[31.2, 52.3]	[27.3, 40.9]
12th	37.5%	57.8%	26.7%	30.0%	41.2%
	[32.0, 43.4]	[41.1, 72.8]	[12.3, 48.6]	[21.3, 40.5]	[32.7, 50.2]
Total	35.9%	33.9%	30.3%	35.6%	37.8%
	[32.8, 39.2]	[25.2, 43.8]	[17.9, 46.4]	[30.1, 41.6]	[32.0, 43.9]

Note: Brackets contain the 95 percent confidence intervals.

Table 2.17 Percent of Current Smokers Reporting that They Would be Able to Quit Smoking Cigarettes if They Wanted to

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	54.3%	10.4%	96.8%	47.1%	90.2%
	[27.7, 78.6]	[1.1, 54.3]	[74.8, 99.7]	[22.4, 73.4]	[48.9, 98.9]
7th	63.4%	51.0%	57.7%	80.3%	41.2%
	[44.9, 78.7]	[22.1, 79.2]	[13.7, 92.1]	[69.1, 88.2]	[26.4, 57.8]
8th	67.5%	53.9%	49.0%	67.4%	72.8%
	[58.5, 75.4]	[32.3, 74.1]	[23.4, 75.1]	[53.1, 79.0]	[62.4, 81.2]
9th	62.3%	46.3%	60.9%	70.1%	60.4%
	[49.7, 73.5]	[28.4, 65.3]	[29.9, 85.0]	[44.1, 87.4]	[49.8, 70.1]
10th	69.6%	65.6%	64.6%	56.4%	79.4%
	[59.5, 78.2]	[47.5, 78.6]	[38.9, 83.9]	[43.1, 68.8]	[65.2, 88.8]
11th	66.1%	60.7%	53.6%	74.5%	65.1%
	[59.8, 71.9]	[44.4, 75.0]	[18.0, 85.8]	[62.1, 83.8]	[55.1, 74.0]
12th	70.5%	65.4%	61.8%	66.7%	75.6%
	[64.8, 75.6]	[46.3, 80.6]	[41.7, 78.5]	[58.9, 73.6]	[68.8, 81.3]
Total	66.9%	54.5%	63.1%	67.3%	71.3%
	[62.4, 71.1]	[43.9, 64.7]	[45.6, 77.7]	[60.0, 73.9]	[64.8, 77.0]

Note: Brackets contain the 95 percent confidence intervals.

Table 2.18 Number of Quit Attempts Among Self-reported Lifetime Smokers, by Gender

	Overall	Female	Male
None	50.8%	49.9%	51.5%
	[48.5, 53.0]	[45.5, 54.2]	[48.8, 54.1]
Once	29.4%	29.8%	29.2%
	[27.2, 31.8]	[26.1, 33.8]	[27.0, 31.5]
Twice	9.6%	10.5%	8.8%
	[8.5, 10.8]	[8.4, 13.0]	[7.3, 10.6]
3-5 times	5.4%	5.5%	5.3%
	[4.4, 6.6]	[4.3, 7.1]	[3.9, 7.0]
6-9 times	1.4%	1.0%	1.8%
	[1.1, 1.8]	[0.6, 1.4]	[1.2, 2.5]
10 or more times	3.4%	3.4%	3.5%
	[2.7, 4.4]	[2.0, 5.5]	[2.5, 4.9]

Note: Brackets contain the 95 percent confidence intervals.

Table 2.19 Number of Quit Attempts Among Self-reported Current Smokers, by Gender

	Overall	Female	Male
None	52.1% [48.0, 56.2]	46.8% [39.5, 54.2]	56.4% [52.0, 60.8]
Once	22.7% [18.8, 27.1]	26.8% [20.2, 34.7]	19.3% [16.1, 22.9]
Twice	11.3% [9.6, 13.3]	14.2% [10.8, 18.4]	9.0% [6.8, 11.8]
3-5 times	7.3% [5.8, 9.3]	7.2% [5.7, 9.0]	7.5% [5.5, 10.2]
6-9 times	2.6% [1.9, 3.5]	1.8% [1.1, 2.9]	3.2% [2.1, 4.9]
10 or more times	4.0% [2.9, 5.6]	3.2% [1.8, 5.6]	4.7% [3.0, 7.1]

Note: Brackets contain the 95 percent confidence intervals.

Use of Cessation Resources

When asked about participating in tobacco use cessation programs, 6.9 percent of lifetime smokers and 11.5 percent of current smokers responded that they had participated in a program to help them quit using tobacco either at school or outside of school (**Table 2.20**). Male lifetime smokers and current smokers reported higher rates of participation in tobacco use cessation programs than female smokers, which is consistent with the gender differences observed in the number of quit attempts. Lifetime smokers in seventh grade and current smokers in 8th grade reported the highest rates of tobacco use cessation program participation. No significant differences were found across ethnic groups. African American lifetime and current smokers reported slightly higher rates of tobacco use cessation program participation than corresponding smokers from other ethnic groups.

The California Smokers' Helpline (Helpline) (1 800 NO BUTTS) provides free tobacco use cessation services to tobacco users who want to quit. It is operated by the University of California, San Diego and is funded by CDPH through Proposition 99, the 1988 Tobacco Tax Health Protection Act. Use of the quitline by adolescent lifetime smokers was assessed in the CSTS. Overall, 2.3 percent of lifetime adolescent smokers and 3.5 percent of current adolescent smokers responded that they had called the quitline to help them quit using tobacco (**Table 2.21**). More current male smokers reported having used the helpline than female smokers (4.4 percent vs. 2.0 percent, $p < 0.05$). However, the observed gender difference is deceptive. The boys reported a slightly longer smoking history, and therefore have had a longer period in which to make attempts to quit smoking. When duration of smoking history is included in the analyses, the difference between boys and girls regarding use of the Helpline disappears. A significant gender difference was not observed for lifetime smokers. The proportion of smokers calling the statewide quitline did not vary across grade. African American lifetime and current smokers, and Pacific Islander current smokers reported slightly higher rates of having used the quitline than did smokers from other ethnic groups.

Table 2.20 Percent of Students Reporting Having Ever Participated in a Program to Help Them Quit Using Tobacco

	Lifetime Smokers (%)	Current Smokers (%)
Overall	6.9% [6.1, 7.8]	11.5% [9.2, 14.2]
Gender		
Female	5.3% [3.8, 7.2]	9.3% [6.6, 13.0]
Male	8.3% [7.4, 9.3]	13.3% [10.7, 16.2]
Grade		
6th	10.1% [6.0, 16.3]	13.1% [4.0, 35.5]
7th	13.8% [9.1, 20.4]	18.7% [11.6, 28.7]
8th	9.4% [7.0, 12.4]	20.4% [15.7, 26.1]
9th	6.4% [4.9, 8.3]	12.4% [8.6, 17.6]
10th	7.5% [4.9, 11.5]	11.4% [6.0, 20.6]
11th	5.2% [4.2, 6.4]	9.3% [6.3, 13.6]
12th	4.7% [3.4, 6.4]	8.3% [5.4, 12.5]
Ethnicity		
Asian	5.4% [3.7, 7.6]	9.6% [5.8, 15.4]
African American	9.7% [4.4, 19.9]	15.5% [6.5, 32.5]
Hispanic/Latino(a)	6.7% [5.7, 8.0]	13.6% [10.8, 17.0]
Pacific Islander	5.1% [1.8, 13.5]	7.0% [3.7, 12.7]
Caucasian	6.1% [4.7, 7.9]	9.1% [5.7, 14.2]

Note: Brackets contain the 95 percent confidence intervals.

Table 2.21 Use of the California Smokers' Helpline by Gender, Grade, and Ethnicity

	Lifetime Smokers (%)	Current Smokers (%)
Overall	2.3% [1.6, 3.3]	3.5% [2.3, 5.2]
Gender		
Female	2.2% [1.1, 4.1]	2.0% [1.2, 3.3]
Male	2.4% [1.7, 3.4]	4.4% [2.6, 7.4]
Grade		
6th	4.3% [2.0, 9.2]	2.0% [0.4, 9.5]
7th	2.2% [1.1, 4.4]	5.6% [2.4, 12.6]
8th	1.9% [1.2, 3.1]	3.3% [1.7, 6.3]
9th	2.5% [1.4, 4.2]	5.2% [2.6, 10.2]
10th	2.7% [1.1, 6.5]	2.1% [1.1, 4.0]
11th	2.3% [1.1, 4.6]	3.7% [1.0, 12.9]
12th	1.6% [1.0, 2.4]	2.9% [1.6, 5.2]
Ethnicity		
Asian	2.2% [0.9, 4.9]	0.5% [0.1, 2.0]
African American	5.0% [1.4, 15.8]	5.5% [2.6, 11.5]
Hispanic/Latino(a)	1.4% [0.9, 2.0]	1.8% [1.1, 3.0]
Pacific Islander	1.6% [0.4, 6.0]	5.5% [1.2, 21.6]
Caucasian	2.8% [2.0, 3.9]	4.7% [2.7, 8.1]

Note: Brackets contain the 95 percent confidence intervals.

Conclusion

The 2003-2004 CSTS results generally indicated a continuing trend toward reduced adolescent tobacco use in California in-school youth observed across all grades and across a variety of lifetime and current tobacco use measures, compared to recent California surveys and the NYTS. All common tobacco use measures observed in the 2003-2004 CSTS were cross-validated in an independent drug abuse survey (CSS) conducted among students in grades 7, 9, and 11 from the same California population during approximately the same time period, indicating that they accurately reflect current tobacco use rates among California's in-school youth. Factors that may have contributed to the decrease of smoking prevalence include more school-based prevention programs, increased cigarette prices, and counter-marketing campaigns. About half of lifetime and current smokers have shown desire to quit smoking cigarettes and approximately one out of ten smokers have participated in available tobacco use cessation programs, including the Helpline.

References

Brown, R. A., P. M. Lewinsohn, J. R. Seeley, and E. F. Wagner. 1996. Cigarette smoking, major depression and other psychiatric disorders among adolescents, Journal of the American Academy of Child and Adolescent Psychiatry, 35, 1602-1610.

Brown, T., and C. Duncan. 2000. London's burning: Recovering other geographies of health. Health and Place, 6, 363-375.

Centers for Disease Control and Prevention (CDC). 2001. Youth Tobacco Surveillance-U.S., 2000. Morbidity Mortality Weekly Report –CDC Surveillance Summaries, 50(SS-4), 1-85.

CDC. 2002. Health United States, 2001, with Urban and Rural Health Chartbook (PHS 2002-1232, pp. 430). Atlanta, GA: CDC.

Choi, W. S., J. P. Pierce, E. A. Gilpin, A. J. Farkas, and C. C. Berry. (1997). Which adolescent experimenters progress to established smoking in the U.S. American Journal of Preventive Medicine, 13, 385-391.

Delnevo, C. D., M. J. Lewis, I. Kaufman, and D. J. Abatemarco. Defining cigarette smoking status in young adults: A comparison of adolescent vs adult measures. American Journal of Health Behavior. 2004;28:374-380.

Esbensen, F. A., M. H. Miller, T. J. Taylor, N. He, and A. Freng. 1999. Differential attrition rates and active parental consent. Evaluation Review, 23, 316-335.

Friestad, C. and J. Rise, Smoking attributions and adolescents' intention to try to quit smoking. Addiction Research, Vol 6(1), February 1998. pp. 13-26.

Griesler, P. C., and D. B. Kandel. 1998. Ethnic differences in correlates of adolescent cigarette smoking. Journal Adolescent Health, 23, 167-180.

Henry, K. L., E. A. Smith, and A. M. Hopkins. 2002. The effect of active parental consent on the ability to generalize the results of an alcohol, tobacco, and other drug prevention trial to rural adolescents. Evaluation Review, 26, 645-655.

Johnston, L. D., P. M. O'Malley, and J. G. Bachman. 2002. Monitoring the future national survey results on drug use, 1975-2001 (Vol. I): Secondary school students (NIH Publication No. 02-5106, pp. 503). Bethesda, MD: National Institute on Drug Abuse.

Kandel, D. B., K. Chen, L. A. Warner, R. C. Kessler, and B. Grant. 1997. Prevalence and demographic correlates of symptoms of last year dependence on alcohol, nicotine, marijuana and cocaine in the U.S. population. Drug Alcohol Depend, 44, 11-29.

Kandel, D. B., J. G. Johnson, H. R. Bird, et al. 1997. Psychiatric disorders associated with substance use among children and adolescents: findings from the Methods for the Epidemiology of Child and Adolescent Mental Disorders (MECA) Study, Journal of Abnormal Child Psychology, 25, 121-132.

Kandel, D., and K. Yamaguchi. 1993. From beer to crack: developmental patterns of drug involvement, American Journal of Public Health, 83, 851-855.

Lee, L. L., E. A. Gilpin, and J. P. Pierce. 1993. Changes in the patterns of initiation of cigarette smoking in the United States: 1950, 1965, and 1980. Cancer Epidemiology, Biomarkers and Prevention, 2, 593–97.

National Cancer Institute (NCI). (2001, November). Changing adolescent smoking prevalence (Smoking and tobacco control Monograph No. 14, pp. i-xviii, 1-261). USDHHS, Author.

Pierce, J. P., W. S. Choi, E. A. Gilpin, A. J. Farkas, and R. K. Merritt. 1996. Validation of susceptibility as a predictor of which adolescents take up smoking in the U.S. Health Psychology, 15, 355-361.

Pirie, P. L., D. M. Murray, and R. V. Luepker. 1988. Smoking prevalence in a cohort of adolescents, including absentees, dropouts, and transfers. American Journal of Public Health, 78, 176-178.

Tyc, V. L., W. Hadley, and D. Allen. Predictors of smoking intentions and smoking status among nonsmoking and smoking adolescents. Addictive Behaviors, Vol 29(6), August 2004. pp. 1143-1147.

U.S. Department of Health and Human Services (USDHHS). 1994. Preventing tobacco use among young people: A report of the Surgeon General. Atlanta, GA: USDHHS, Public Health Service, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

U.S. Department of Health and Human Services (USDHHS). (1998). Tobacco Use Among US Racial/Ethnic Minority Groups-African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A Report of the Surgeon General. Atlanta, GA: CDC, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health.

CHAPTER 3

STUDENT-LEVEL DESCRIPTIVES: ATTITUDES AND BELIEFS ABOUT TOBACCO USE

Chapter 3: Student Level Descriptives:
Attitudes and Beliefs About Tobacco Use

CHAPTER 3: STUDENT-LEVEL DESCRIPTIVES: ATTITUDES AND BELIEFS ABOUT TOBACCO USE

CHAPTER HIGHLIGHTS

- **California students hold strongly negative beliefs and attitudes about smoking and its consequences, and about the tobacco industry.**
- **California students are not as exposed to SHS as in previous years and are less likely to be surrounded by adults or peers who smoke.**
- **California students are frequently exposed to anti-smoking messages in the media (especially via TV) but are also exposed to pro-smoking media (through TV, the movies, and ads at sports/community events).**
- **More California students report exposure to tobacco use prevention information in school than in previous years, and perceive this information to be helpful in making decisions about tobacco use.**
- **Physical harm from tobacco use is the most frequently recalled topic of tobacco use prevention education, but the social causes of smoking are now equally frequently cited among content of such education compared to previous years.**
- **Current smokers are less likely to endorse anti-tobacco beliefs or acknowledge the harmfulness of tobacco use, and are more likely to be exposed to SHS and have peers who smoke.**

Introduction

Psychosocial factors play an important role in the development of smoking behaviors among children and adolescents (Turner et al., 2004). Some of these factors include advertising; role models who smoke; perceptions about one's ability to refuse an offer to smoke; peer influences to smoke; normative expectations with regard to smoking; the perception that smoking has personal utility; availability of cigarettes; and, perceived harm. Flay, et al. (1983) proposed a model of cigarette smoking that identified predictable stages in the development of the smoking habit. In the first stage, peers and family who smoke play a role in influencing non-smokers to think about smoking cigarettes. These social influences and others continue to be cited as strong predictors of future tobacco use among youth, and prevention programs based on social influence approaches generally, but not always (e.g., Peterson et al., 2000) have been shown to decrease rates of adolescent smoking (Hahn et al., 1990; Sussman et al., 1990).

Students completing the CSTS were asked questions about tobacco use behaviors, and were asked to comment on their attitudes about the tobacco industry; social desirability of tobacco use; perceived health consequences of tobacco use; and perceived social norms, to examine these possible influences. The domains and items used for the student-level analysis in Chapter 3 are found in **Table 3.1** along with Cronbach's Alpha coefficients for each domain. This chapter will report the student level descriptives, and Chapters 5 and 8 will explore how grantee status and program implementation are related to adolescent tobacco use and its correlates.

Table 3.1 Items Used in the Analysis (Student Survey)

Domain (Cronbach's Alpha)		Question
Social perceptions about smoking (0.59)	Q35	Do you think young people who smoke cigarettes have more friends?
	Q36	Do you think smoking cigarettes makes young people look cool or fit in?
Perceived health consequences from smoking (0.52)	Q37	Do you think young people risk harming themselves if they smoke from one to five cigarettes per day?
	Q38	Do you think it is safe to smoke for only a year or two, as long as you quit after that?
	Q51	Do you think the smoke from other people's cigarettes is harmful to you?
	Q96	People can get addicted to using tobacco just like they can get addicted to using other drugs such as cocaine or heroin.
Secondhand Smoke/Social Influences (0.84)	Q48	During the past seven days, on how many days were you in the same room with someone who was smoking cigarettes?
	Q49	During the past seven days, on how many days were you in the same room AT HOME with someone who was smoking cigarettes?
	Q50	During the past seven days, on how many days did you ride n a car with someone who was smoking cigarettes?
	Q52*	Does anyone who lives with you NOW smoke cigarettes?
	Q53*	How many of your four closest friends smoke cigarettes?
Anti-tobacco industry norms (0.62)	Q72	Do you think that tobacco companies try to get people addicted to cigarettes?
	Q73*	Tobacco companies would stop selling cigarettes if they knew for sure that smoking hurts people.
	Q74	Tobacco companies try to get young people to start smoking by using advertisements that are attractive to young people.
Media Exposure		
Anti-Tobacco Media Exposure (0.64)	Q67	When you listen to the radio, how often do you hear advertisements about NOT smoking or about NOT chewing tobacco?
	Q68	When you see billboards (outdoor signs), how often do you see advertisements about NOT smoking or about NOT chewing tobacco?
	Q69	When you watch TV, how often do you see stories or advertisements about the dangers of smoking tobacco or chewing tobacco?

Table 3.1 Items Used in the Analysis (Student Survey)

Domain (Cronbach's Alpha)		Question
Pro-Tobacco Media Exposure (0.38)	Q45	When you watch TV or go to the movies, how often do you see actors using tobacco?
	Q46	During the past 12 months, did you buy or receive anything that has a tobacco company name or picture on it?
	Q47	Would you ever use or wear something that has a tobacco company name or picture on it such as a lighter, T-shirt, hat, or sunglasses?
	Q70	When you go to sports events, fairs or community events, how often do you see advertisements for cigarettes or chewing tobacco?
Recalled TV Messages (0.64)	Q71	During the last 30 days, do you remember seeing on TV any of the following messages About not smoking?
	Q71a	Showed smoke swirling on screen and voices talking about smoking situations.
	Q71b	Showed tobacco executives from a tobacco company talking about light cigarettes.
	Q71c	Showed tobacco executives talking about becoming a friend of ethnic communities by paying for and supporting community events and organizations.
	Q71d	Showed the inside of a body and the damage done by breathing in smoke from someone else's cigarette.
	Q71e*	Ending with the word "truth".
	Q72f	Ending with the phrase "do you smell smoke".
Smoking Norms**	Q94	Most young people do NOT smoke cigarettes.

*Item was dropped in creating an index for each domain based on results of factor analyses and Cronbach's alpha.
**No Cronbach's alpha is provided. 'Smoking norms' consists of a single item, but Cronbach's alpha requires a minimum of two items.

Social Perceptions/Social Appeal

The perceived social desirability of smoking is considered a strong predictor of smoking behavior among youth. A review of the literature on psychosocial factors related to adolescent smoking (Tyas and Pederson, 1998) identified 20 risk factors including age, ethnicity, peer smoking, peer attitudes and norms, family environment, school factors, risk behaviors, stress, depression/distress, attitudes, and health concerns. Adolescents face many challenges that influence the development of their self-identity, and their peers play a major role in that development (Jessor, 1991). Sussman et al., (1995) offered three examples of informational social influences: identification of the problem behavior with positive social images, high estimates of prevalence of the problem behavior, and a positive perspective regarding specific perceived qualities of the

problem behavior. As examples of the third informational influence, youth who perceive that they will benefit socially by smoking, by appearing independent, more grown-up, tougher, or friendlier, are more likely to be/become smokers (Botvin and Epstein, 1999; Chassin, Presson, and Sherman, 1990; Burton et al., 1989).

Two CSTS questions evaluated the perceived positive image of smokers. Positive responses to these questions were considered evidence for motivation to smoke. These questions were: (1) young people who smoke have more friends, and (2) smoking cigarettes makes young people look cool/fit in. Response options were “definitely yes,” “probably yes,” “probably not,” and “definitely not.” Grouping “definitely/probably” yes into one response option and “definitely/probably” not into the second option-dichotomized responses.

Overall rates were similar for middle and high school students (79.6 percent and 78.1 percent, respectively) responding “definitely not or probably not” to the question, “Do you think young people who smoke have more friends?” Across gender and ethnic groups, fewer students perceived that smoking “makes young people look cool” than perceived that “smokers have more friends.” The results as presented in **Table 3.2** were similar to those found in the 2001-2002 IETP (McCarthy et al., 2004).

The only clear difference in response rates for both of the social perception questions were that more Caucasian students in both middle school and high school denied that smokers had more friends or looked cooler compared to all other ethnic groups. These findings were consistent with those reported in 2001-2002.

Health Consequences of Tobacco Use

Four questions in the CSTS were designed to assess the perceived harmfulness of tobacco use and exposure to SHS. **Table 3.2** presents these results for middle and high school students separately. The response options featured in the table vary in such a way that all frequencies in the table represent anti-tobacco use responses to each question. Overall, most students believed that exposure to cigarette smoke either by smoking or through environmental exposure is harmful. There were no notable changes in 2003-2004 on any of these items. More than 80 percent of students regardless of age, gender, and ethnicity perceived tobacco to be harmful across all four questions.

Table 3.2 Perceptions about Consequences of Tobacco Use

Measures	Overall	Female	Male	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
Middle School							
Perceived Social Consequences							
Young people who smoke cigarettes have more friends (Percent responding "Definitely Not or Probably Not")	79.6% [77.2, 81.7]	80.1% [77.4, 82.5]	79.1% [76.3, 81.7]	78.0% [74.5, 81.1]	74.2% [66.2, 80.8]	75.5% [70.9, 79.6]	86.5% [85.2, 87.6]
Smoking cigarettes makes young people look cool/ fit in (Percent responding "Definitely Not or Probably Not")	88.3% [87.1, 89.4]	89.5% [87.5, 91.2]	87.2% [85.8, 88.5]	87.5% [82.8, 91.1]	86.4% [82.0, 89.8]	86.6% [84.6, 88.4]	90.9% [88.8, 92.7]
Perceived Health Consequences							
Young people risk harming themselves if they smoke 1-5 cigarettes/day (Percent responding "Definitely or Probably")	85.2% [83.8, 86.5]	86.7% [84.5, 88.7]	83.8% [81.9, 85.6]	87.5% [83.3, 90.7]	82.9% [75.5, 88.3]	83.0% [80.8, 85.0]	88.0% [84.9, 90.5]
It is safe to smoke for only a year or two, as long as you quit after that (Percent responding "Definitely or Probably")	87.9% [86.1, 89.5]	89.9% [88.4, 91.3]	85.9% [83.4, 88.1]	86.5% [81.0, 90.6]	86.0% [81.7, 89.4]	86.3% [83.7, 88.6]	91.3% [89.8, 92.5]
The smoke from other people's cigarettes is harmful to you (Percent responding "Definitely or Probably")	89.4% [88.1, 90.6]	90.2% [88.5, 91.8]	88.7% [87.1, 90.1]	92.0% [89.3, 94.1]	83.7% [78.4, 87.8]	87.6% [85.6, 89.3]	92.4% [89.7, 94.3]
People can get addicted to using tobacco like they can get addicted to using other drugs (Percent responding "Definitely or Probably")	93.4% [91.4, 94.9]	93.8% [90.4, 96.1]	92.9% [90.9, 94.5]	93.4% [87.1, 96.7]	90.1% [85.6, 93.4]	92.3% [90.4, 93.9]	95.2% [91.4, 97.3]

Table 3.2 (cont.) Perceptions about Consequences of Tobacco Use

Measures	Overall	Female	Male	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
High School							
Perceived Social Consequences							
Young people who smoke cigarettes have more friends (Percent responding "Definitely Not or Probably Not")	78.1% [75.5, 80.5]	80.4% [75.8, 84.3]	75.9% [73.5, 78.1]	74.8% [72.0, 77.4]	72.2% [60.2, 81.7]	73.0% [69.8, 76.0]	85.5% [83.6, 87.3]
Smoking cigarettes makes young people look cool/fit in (Percent responding "Definitely Not or Probably Not")	87.0% [85.0, 88.8]	88.7% [84.8, 91.7]	85.5% [84.3, 86.6]	85.1% [82.1, 87.7]	81.0% [70.8, 88.2]	86.2% [83.9, 88.3]	89.7% [88.3, 91.0]
Perceived Health Consequences							
Young people risk harming themselves if they smoke 1-5 cigarettes/day (Percent responding "Definitely or Probably")	92.2% [91.0, 93.2]	93.1% [90.7, 94.9]	91.4% [90.6, 92.2]	92.4% [90.1, 94.2]	88.1% [83.4, 91.6]	90.9% [89.3, 92.3]	94.5% [93.7, 95.2]
It is safe to smoke for only a year or two, as long as you quit after that (Percent responding "Definitely Not or Probably Not")	87.5% [85.9, 89.0]	90.3% [88.4, 91.9]	84.8% [82.8, 86.7]	86.6% [83.1, 89.5]	84.5% [76.5, 90.1]	87.0% [83.7, 89.7]	88.9% [87.4, 90.2]
The smoke from other people's cigarettes is harmful to you (Percent responding "Definitely or Probably")	94.3% [93.7, 94.9]	95.6% [94.8, 96.2]	93.2% [92.5, 93.8]	95.8% [94.8, 96.3]	92.4% [86.5, 95.8]	93.3% [92.2, 94.2]	95.4% [94.7, 96.1]
People can get addicted to using tobacco like they can get addicted to using other drugs (Percent responding "Definitely or Probably")	95.1% [94.5, 95.6]	96.5% [95.6, 97.3]	93.7% [93.0, 94.4]	96.3% [95.1, 97.2]	92.1% [86.3, 95.5]	94.4% [92.8, 95.6]	96.2% [95.2, 97.1]

Note: Brackets contain the 95 percent confidence intervals.

Girls were more likely to report believing in the harmfulness of tobacco compared to boys across all four questions. The results for both middle and high school youth were similar across ethnic groups. The exception was for Caucasian middle school students (91.3 percent), who were less likely to believe that it is safe to smoke for only a year or two as long as you quit, compared to 87.5 percent of A/PI students, 82.9 percent of African American students and 83.0 percent of Hispanic students. In high schools, the rates were within six percentage points across all questions. The data collected on perceived harmfulness of cigarette smoking supported what others have found (e.g., Chassin et al., 2001). From an early age, the majority of students reported believing that tobacco use is harmful to physical health.

Table 3.3 illustrates students' knowledge about five specific health consequences of tobacco use. Knowledge scores on all five items increased from middle school to high school. Patterns differed by sex and by type of school, with middle school boys showing slightly more knowledge than middle school girls on items related to the addictiveness of smoking, nicotine not being the only harmful substance in tobacco, and the harmfulness of SHS. In contrast, high school girls were apt to be slightly more aware that smoking exacerbates asthma and that smoking by a pregnant woman harms the unborn child compared to high school boys. On most questions, those students admitting current smoking reported less awareness of the negative health consequences of smoking than students reporting abstinence from tobacco use, a finding consistent with previous literature (Segerstrom et al., 1993) and consistent with knowledge being somewhat protective against adolescent tobacco use (Bruvold, 1993).

Social Influences – Smokers and Secondhand Smoke in the Environment

The CSTS included questions that asked students about their exposure to tobacco use at home, in a car, and with close friends. Three of these questions also assessed exposure to SHS, but were included in this section because they are useful for gauging the prevalence of smoking in the youths' environment. **Table 3.4** shows the proportion of students responding either "zero" or "none" to five questions querying prevalence of exposure to people who smoke or to venues with smoke, by gender, ethnicity and smoking status. The higher proportion of youth responding "no" or "never" relative to previous years suggests that students are now less exposed to people who smoke or to venues with smoke, which then suggests that there are fewer adults and fewer peers modeling smoking behavior. The response options for these questions were coded in the negative to allow for more immediate comparisons to the NYTS-U.S. data (CDC, 2001).

Table 3.3 Knowledge about Deleterious Consequences of Tobacco Use

	Smoking and Asthma[1]	Tobacco Addiction[2]	Smoking and Pregnancy[3]	Nicotine[4]	SHS and Lung Cancer[5]
Middle School					
Overall	63.4% [59.9, 66.7]	39.8% [36.9, 42.7]	92.0% [90.6, 93.2]	47.0% [43.7, 50.3]	66.3% [64.0, 68.5]
Female	64.0% [60.1, 67.8]	37.2% [34.1, 40.5]	92.8% [90.3, 94.7]	41.7% [38.3, 45.3]	62.1% [59.5, 64.6]
Male	62.7% [59.5, 65.8]	42.3% [39.2, 45.4]	91.2% [90.0, 92.3]	52.2% [48.5, 55.9]	70.5% [67.0, 73.8]
Asian/PI	63.2% [58.2, 67.8]	34.4% [27.9, 41.5]	93.4% [91.0, 95.2]	43.8% [39.6, 48.0]	67.0% [62.4, 71.3]
African American	69.3% [64.8, 73.5]	33.6% [25.3, 43.0]	88.0% [80.9, 92.7]	42.6% [34.5, 51.2]	68.4% [64.5, 72.0]
Hispanic/Latino(a)	66.0% [61.0, 70.7]	36.6% [33.4, 40.0]	92.1% [89.8, 93.8]	40.7% [36.0, 45.5]	62.6% [60.6, 64.6]
Caucasian	59.6% [54.4, 64.7]	45.8% [42.6, 49.1]	92.4% [89.5, 94.5]	54.9% [52.8, 57.0]	70.1% [66.6, 73.3]
Non-current Smoker	63.3% [59.6, 66.8]	39.6% [36.7, 42.7]	93.2% [91.8, 94.4]	47.3% [43.8, 50.9]	66.9% [64.5, 69.3]
Current Smoker	61.4% [54.8, 67.6]	49.8% [41.0, 58.7]	76.7% [68.3, 83.3]	48.2% [39.0, 57.5]	50.8% [41.9, 59.7]
High School					
Overall	76.7% [75.1, 78.3]	63.7% [60.7, 66.5]	94.5% [93.9, 95.1]	69.4% [66.6, 72.2]	75.8% [73.8, 77.6]
Female	80.1% [78.6, 81.5]	63.4% [61.1, 65.6]	96.8% [96.2, 97.4]	67.3% [63.2, 71.2]	75.2% [73.4, 76.9]
Male	73.5% [70.7, 76.1]	64.0% [60.0, 67.7]	92.4% [91.2, 93.4]	71.5% [68.6, 74.3]	76.3% [73.8, 78.7]
Asian/PI	76.2% [73.9, 78.4]	57.1% [54.3, 60.0]	95.0% [93.3, 96.3]	66.7% [63.2, 70.1]	79.2% [74.8, 83.1]
African American	78.9% [73.5, 83.5]	58.9% [49.4, 67.9]	92.5% [90.1, 94.3]	62.6% [53.6, 70.8]	77.1% [71.6, 81.8]
Hispanic/Latino(a)	74.6% [72.3, 76.9]	58.7% [54.1, 63.3]	93.7% [92.8, 94.5]	61.0% [56.8, 65.0]	69.9% [66.8, 72.7]
Caucasian	78.4% [76.8, 79.9]	72.1% [70.0, 74.1]	95.7% [94.1, 97.0]	79.9% [78.1, 81.7]	80.2% [78.3, 81.9]
Non-current Smoker	78.0% [76.7, 79.3]	64.0% [61.1, 66.9]	95.5% [94.9, 95.9]	70.1% [67.5, 72.6]	76.7% [74.7, 78.5]
Current Smoker	67.8% [63.2, 72.1]	61.9% [58.5, 65.2]	90.4% [87.7, 92.5]	67.8% [62.7, 72.5]	69.9% [65.8, 73.7]

Note: Brackets contain the 95 percent confidence intervals.
[1] Q90. Smoking cigarettes makes asthma worse.
[2] Q91. Teenagers are too young to get addicted to tobacco.
[3] Q92. A pregnant woman can harm her unborn baby if she smokes cigarettes.
[4] Q93. Nicotine is the only harmful substance in tobacco.
[5] Q95. Breathing smoke from someone else's cigarette can cause lung cancer.

Table 3.4 Secondhand Smoke and Social Influence of Smoking (Percent Responding "None" or "0")

	Exposure to cigarette smoke[1]	Exposure to cigarette smoke at home[2]	Exposure to cigarette smoke in car[3]	Live with smoker[4]	Close friend smokes[5]
Middle School					
Overall	67.2% [64.7, 69.5]	79.5% [77.2, 81.6]	78.8% [76.5, 81.0]	67.8% [65.4, 70.1]	83.7% [81.9, 95.3]
Female	66.3% [63.4, 69.0]	78.5% [75.4, 81.3]	79.5% [77.1, 81.7]	67.4% [64.3, 70.3]	83.7% [80.7, 86.3]
Male	68.0% [65.2, 70.7]	80.4% [78.5, 82.3]	78.1% [75.4, 80.6]	68.3% [65.8, 70.6]	83.7% [80.6, 86.4]
Asian/PI	65.6% [60.9, 70.0]	77.4% [73.7, 80.7]	79.3% [75.1, 83.0]	64.1% [58.9, 68.9]	86.2% [81.7, 89.8]
African American	61.4% [54.3, 68.0]	72.4% [66.0, 78.0]	72.3% [66.3, 77.5]	67.6% [61.6, 73.1]	76.5% [68.5, 82.9]
Hispanic/Latino(a)	72.8% [70.0, 75.4]	83.5% [80.6, 86.0]	81.2% [78.8, 83.4]	69.9% [67.4, 72.2]	81.9% [79.3, 84.2]
Caucasian	63.1% [60.0, 66.0]	77.9% [74.8, 80.7]	78.4% [75.2, 81.3]	67.1% [62.5, 71.4]	87.1% [85.6, 88.5]
Non-current Smoker	69.7% [67.4, 71.9]	81.2% [79.1, 83.1]	80.7% [78.3, 82.9]	69.2% [66.6, 71.7]	87.0% [85.8, 88.1]
Current Smoker	20.6% [15.9, 26.2]	43.7% [36.2, 51.5]	41.3% [32.4, 50.8]	37.2% [27.7, 47.9]	17.0% [10.0, 27.3]
High School					
Overall	50.9% [49.7, 52.1]	77.2% [75.9, 78.5]	74.1% [73.1, 75.0]	66.1% [64.3, 67.9]	62.7% [60.4, 65.0]
Female	49.9% [47.6, 59.1]	77.4% [75.7, 79.1]	74.1% [72.9, 75.3]	65.6% [63.7, 67.4]	62.9% [59.4, 66.2]
Male	51.8% [50.4, 53.2]	77.0% [75.2, 78.8]	75.1% [72.7, 75.4]	66.6% [63.9, 69.2]	62.6% [60.5, 64.6]
Asian/PI	55.4% [51.6, 59.2]	80.1% [77.1, 82.7]	76.7% [73.2, 79.9]	67.5% [63.6, 71.2]	70.7% [63.8, 76.8]
African American	51.9% [43.1, 60.5]	71.4% [65.7, 76.4]	73.5% [70.6, 76.2]	60.6% [55.3, 65.6]	68.4% [60.0, 75.8]
Hispanic/Latino(a)	55.3% [53.8, 56.8]	80.2% [78.4, 81.8]	76.1% [74.6, 77.6]	64.6% [61.5, 67.6]	60.0% [56.8, 63.2]
Caucasian	45.4% [43.3, 47.5]	75.1% [71.9, 78.0]	71.6% [69.7, 73.5]	68.7% [65.7, 71.6]	61.4% [59.6, 63.2]
Non-current Smoker	56.1% [54.9, 57.3]	79.7% [78.0, 81.2]	79.6% [78.2, 80.8]	68.3% [66.1, 70.4]	70.2% [68.1, 72.2]
Current Smoker	17.5% [14.6, 20.7]	61.8% [58.2, 65.3]	38.8% [35.0, 42.7]	51.7% [49.0, 54.4]	16.3% [14.3, 18.4]

Note: Brackets contain the 95 percent confidence intervals.
1 Q48. During the past seven days, on how many days were you in the same room with someone who was smoking cigarettes?
2 Q49. During the past seven days, on how many days were you in the same room AT HOME with someone who was smoking cigarettes?
3 Q50. During the past seven days, on how many days did you ride in a car with someone who was smoking cigarettes?
4 Q52. Does anyone who lives with you NOW smoke cigarettes?
5 Q53. How many of your four closest friends smoke cigarettes?

The majority of youth responding to these questions were not exposed to tobacco smoke in a room or car. The rates of non-exposure in a room (not at home) were substantially lower for high school students (50.9 percent) compared to middle school students (67.2 percent) ($p < .01$). Eighty percent of middle school students (79.5 percent) and 77.2 percent of high school students reported that during the past week they were not in a room at home with someone smoking cigarettes. Slightly fewer high school youth (74.1 percent) than middle school youth (78.8 percent) responded that they had not been in a car with someone who was smoking during the past seven days. This reflects a five percent increase from the 2001-2002 IETP report among high school students reporting that they had not been exposed to SHS in a car ($p < .05$), suggesting real progress in reducing high school youth exposure to environmental tobacco smoke and in reducing their exposure to adult models and peers who smoke.

There is an interesting ten-percentage point difference in the proportion of youth who responded that they do not live with someone who smokes and the proportion of youth who said that they were not in a room at home with someone who was smoking. More youth reported living with a smoker in their home than reported having been exposed to smoke in a room at home. This suggests that while students may be living with others who smoke, the smoking behavior occurs outside of the home or in an area of the home away from the rooms that the youth are most likely to spend time in. The same interesting contrast was previously observed in the 2001-2002 CSTS survey (McCarthy et al., 2004). Prevalence of reported exposure to SHS was evaluated for current smokers compared to non-smokers. The percent of smokers who reported no exposure to SHS was lower (by about 40 percentage points) when compared to non-smokers. Additionally, non-smokers were four to five times more likely to report not having a close friend who smokes compared to smokers. These striking differences between current student smokers and non-smokers in exposure to people who smoke and venues with smoke suggest that the individual “choice” to smoke is largely equivalent to the “choice” of hanging out with smokers and at venues that permit exposure to smoke.

Consistently higher rates of African American middle school youth responded that they had been exposed to smoke in any room, a room at home, or in a car. The rates of Caucasian high school students reporting non-exposure to smoke in a room and in a car were lower than rates for high school students from other ethnic groups. African American high school students (60.6 percent) and Latino high school students (64.6 percent) had the highest rates of living with someone who smokes – that is, they were more likely to be exposed to SHS. African American middle school students (68.4 percent) and Asian middle school students (70.7 percent) reported noticeably higher rates of having no friends who smoked compared to Latino middle school students (60.0 percent) and Caucasian middle school students (61.4 percent). The high rate of Asian middle school students reporting that none of their friends smoked (86.2 percent) is an interesting contrast to the lower rate of Asian middle school students reporting that no one at home smoked (64.1 percent). Living in a home with a smoker usually increases the likelihood that a student will report having one or more friends who smoke (OR = 2.14, 95%CI = 1.90, 2.41), a relationship which was not supported for Asian/PI middle school students (OR = 0.65, 95% CI = 0.50, 0.85).

As might be expected, the rate for high school students reporting that they did not have any close friends who smoke cigarettes was substantially lower than the rate for middle school students (62.7 percent vs. 83.7 percent). Although the differences between age groups remained the same, the percent of students across groups reporting that they did not have any close friends who smoke cigarettes was seven to eight percentage points higher in 2003-2004 than in 2001-2002 (all $p < .05$). Also consistent with findings from the 2001-2002 IETP, a greater percentage of Caucasian (87.1 percent) and API (86.2 percent) students reported having no friends who smoked in middle school, compared to Hispanic/Latino(a) (81.9 percent) and African American (76.5 percent) students. Again, in high school this pattern was reversed, with Caucasian (61.4 percent) and Hispanic/Latino(a) (60.0 percent) students having the lowest rates of reporting that none of their closest friends smoke compared to API (70.7 percent) and African American (68.4 percent) students. These proportions were approximately seven to eight percentage points higher than the corresponding proportions reported in 2001-2002, indicating an across-the board decrease in exposure to friends who smoke.

Attitudes and Beliefs about the Tobacco Industry

As was found in the 1999-2000 IESS and the 2001-2002 IETP, the prevailing attitude among both middle and high school students was strongly negative toward the tobacco industry. The most negative attitudes were related to whether tobacco companies try to get people addicted to tobacco. High school students had slightly more negative attitudes compared to middle school students. These numbers were not substantially different from the 2001-2002 data. **Table 3.5** depicts the results by gender and ethnicity. Asian and Caucasian students showed slightly more negative attitudes about the tobacco industry than either Hispanic/Latino(a) or African American students.

Media Exposure

Table 3.6 depicts the responses to anti-smoking media exposure by school type, gender, ethnic group, and smoking status. The pattern found in the results was similar to that found in the 2001-2002 IETP. Television (TV) was the highest recalled media source for ads about the dangers of using tobacco for both middle (77.6 percent) and high school students (80.7 percent). More students recalled hearing ads on the radio than recalled seeing them on billboards. High school students recalled radio ads at slightly higher rates than middle school students. Age was not a major factor in recollection of exposure to anti-smoking messages with 85.5 percent of middle school students and 88.9 percent of high school students reporting any exposure to anti-tobacco messages. Slightly fewer smokers than nonsmokers reported exposure to anti-smoking messages for both middle and senior high students.

Table 3.5 Attitudes about Tobacco Industry

Measures	Overall	Female	Male	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
Middle School							
Tobacco companies would stop selling cigarettes if they knew for sure that smoking hurts people (Percent responding "Definitely Not" or "Probably Not")	80.5% [78.6, 82.2]	81.6% [78.4, 84.4]	79.4% [77.1, 81.6]	78.0% [74.1, 81.5]	75.6% [69.0, 81.2]	77.2% [75.5, 78.9]	86.7% [73.9, 89.1]
Tobacco companies try to get people addicted to cigarettes (Percent responding "Definitely Yes" or "Probably Yes")	86.9% [85.6, 88.1]	86.9% [85.0, 88.6]	86.8% [85.2, 88.2]	87.7% [84.2, 90.4]	86.3% [79.1, 91.3]	83.6% [81.5, 85.5]	90.6% [88.6, 92.3]
Tobacco companies try to get young people to start smoking by using ads that are attractive to young people (Percent responding "Definitely Yes" or "Probably Yes")	81.7% [80.2, 83.1]	82.6% [80.6, 84.5]	80.8% [78.7, 82.7]	80.5% [75.1, 85.0]	80.6% [77.1, 83.6]	80.0% [78.0, 81.4]	84.4% [82.0, 86.6]
High School							
Tobacco companies would stop selling cigarettes if they knew for sure that smoking hurts people (Percent responding "Definitely Not" or "Probably Not")	89.4% [88.6, 90.1]	91.9% [91.0, 92.6]	87.1% [85.9, 88.2]	89.0% [85.9, 91.4]	85.1% [78.1, 90.1]	86.9% [85.4, 88.3]	93.2% [92.3, 93.9]
Tobacco companies try to get people addicted to cigarettes (Percent responding "Definitely Yes" or "Probably Yes")	91.8% [90.6, 92.9]	92.5% [91.5, 93.4]	91.2% [89.6, 92.6]	93.6% [90.6, 95.7]	89.2% [85.3, 92.2]	90.5% [87.2, 93.1]	93.2% [92.4, 93.8]
Tobacco companies try to get young people to start smoking by using ads that are attractive to young people (Percent responding "Definitely Yes" or "Probably Yes")	91.0% [90.4, 91.6]	92.0% [90.8, 93.1]	90.0% [89.2, 90.8]	90.9% [89.2, 92.3]	88.3% [84.1, 91.5]	90.0% [88.8, 91.1]	92.7% [92.0, 93.5]

Note: Brackets contain the 95 percent confidence intervals.

Table 3.6 Media Exposure to Anti-smoking Messages (Percent Responding "Sometimes" or "A lot")

	Radio[1]	Billboard[2]	TV[3]	Any exposures to anti-smoking messages
Middle School				
Overall	58.5% [56.1, 60.9]	55.4% [52.6, 58.2]	77.6% [75.8, 79.2]	85.5% [83.8, 87.0]
Female	58.1% [53.9, 62.1]	53.8% [49.7, 57.9]	77.8% [75.6, 79.9]	85.6% [81.8, 88.7]
Male	58.9% [56.5, 61.4]	56.9% [54.1, 60.0]	77.4% [75.1, 79.5]	85.4% [82.5, 87.9]
Asian/PI	63.2% [56.3, 69.7]	53.5% [48.6, 58.3]	79.8% [74.4, 84.4]	88.3% [84.8, 91.1]
American	60.3% [55.1, 65.2]	57.2% [50.4, 63.8]	79.3% [74.1, 83.7]	86.3% [81.5, 90.0]
Hispanic/Latino(a)	60.3% [57.9, 62.6]	60.9% [56.6, 65.0]	78.5% [76.7, 80.2]	86.7% [85.0, 88.3]
Caucasian	55.1% [52.6, 58.2]	49.1% [45.9, 52.3]	75.8% [73.5, 77.9]	83.0% [80.5, 85.1]
Non-current Smoker	58.7% [56.1, 61.3]	55.3% [52.5, 58.0]	78.1% [76.4, 79.7]	85.7% [83.9, 87.2]
Current Smoker	56.7% [49.1, 64.0]	54.3% [43.3, 64.9]	68.7% [61.1, 75.5]	83.9% [78.2, 88.4]
High School				
Overall	59.4% [57.7, 61.1]	52.4% [50.6, 54.1]	80.7% [78.5, 82.7]	88.9% [87.3, 90.3]
Female	60.5% [57.9, 63.1]	50.8% [49.2, 52.4]	80.2% [77.5, 82.7]	88.6% [86.3, 90.5]
Male	58.2% [56.3, 60.1]	53.9% [51.0, 56.8]	81.3% [79.4, 83.0]	89.3% [88.1, 90.3]
Asian/PI	62.4% [58.5, 66.2]	55.6% [52.4, 58.7]	84.2% [81.8, 86.4]	91.4% [89.8, 92.7]
American	59.0% [54.2, 63.6]	54.9% [49.3, 60.4]	79.3% [74.7, 83.3]	89.3% [84.7, 92.6]
Hispanic/Latino(a)	61.8% [58.4, 65.1]	53.2% [49.1, 57.2]	80.6% [77.9, 83.0]	89.9% [88.1, 91.5]
Caucasian	56.2% [53.6, 58.8]	50.2% [48.7, 51.7]	80.2% [77.6, 82.5]	87.3% [85.2, 89.1]
Non-current Smoker	59.3% [57.8, 60.8]	51.9% [50.5, 53.3]	81.5% [79.5, 83.3]	89.5% [87.7, 91.0]
Current Smoker	58.9% [51.7, 65.7]	53.1% [47.1, 59.0]	76.9% [71.8, 81.3]	86.3% [82.4, 89.3]

Note: Brackets contain the 95 percent confidence intervals.
[1] Q67. When you listen to the radio, how often do you hear advertisements about NOT smoking or NOT chewing tobacco?
[2] Q68. When you see billboards (outdoor signs), how often do you see advertisements about NOT smoking or about NOT chewing tobacco?
[3] Q69. When you watch TV, how often do you see stories or advertisements about the dangers of smoking tobacco or chewing tobacco?

Table 3.7 illustrates the percent of students responding that they had seen specific anti-tobacco ads on TV. Fewer middle school students (65.5 percent) than high school students (86.4 percent) reported seeing at least one of the ads. Nearly twice as many high school students (68.3 percent) as middle school students (35.5 percent) recalled seeing the American Legacy Foundation's 'truth' ads, which was consistent with 'truth' ad placement. Only 10.4 percent of middle school students and 11.6 percent of high school students recalled exposure to the adult targeted ads of a fictional tobacco-marketing executive that ended with the question, "Do you smell smoke?"

The 2003-2004 IETP asked questions about exposure to pro-smoking electronic media messages or tobacco industry paraphernalia, as well as anti-tobacco media exposure. **Table 3.8** shows the proportion of youth responding that they had seen actors using tobacco either in the movies or on TV, or they had seen tobacco ads at community events. Far more students (78.4 percent - 86.5 percent), reported seeing actors using tobacco than recalled seeing tobacco advertising at community events (48.9 percent - 52.3 percent) regardless of age and gender. The patterns were nearly identical to the findings from the 2001-2002 IETP. Middle school current smokers were more likely to report exposure to pro-tobacco media than non-smokers by approximately ten percentage points. The pattern was similar for high school students with the exception that high school non-smokers reported rates of exposure to pro-tobacco media only 2.7 to five percentage points lower than the rates reported by high school current smokers.

Students were also asked two questions about tobacco company paraphernalia: (1) if they had ever received or purchased paraphernalia; and, (2) whether or not they ever wore paraphernalia. Although the rates for high school students were lower in general compared to middle school students, most reported not buying or receiving tobacco related items (87.6 percent middle and 85.1 percent high school), nor wearing or using tobacco related items (56.1 percent middle and 38.1 percent high school) (see **Table 3.9**). These numbers were approximately 30 percentage points lower for both school types compared to the 2001-2002 IETP, suggesting a marked decrease in these types of marketing efforts by tobacco companies. Across school types, boys were less likely than girls to report never having received or used tobacco-related items (see **Table 3.9**). The percentage of current smokers reporting that they had not received (54.7 percent-66.3 percent) or would not wear tobacco-related items (25.1 percent-21.2 percent) was lower than the percentage of non-smokers (89.4 percent - 88.1 percent, 58.2 percent - 40.6 percent, respectively) across school types.

Table 3.7 Recall Viewing Specific Television Ads

	Overall	Female	Male	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
Middle School							
Smoke swirls on screen	21.5% [19.5, 23.7]	20.6% [18.1, 23.4]	22.5% [19.4, 25.9]	25.8% [21.5, 30.7]	20.4% [16.7, 24.7]	23.1% [20.0, 26.6]	19.3% [17.4, 21.3]
Talk about light cigarettes	16.0% [14.1, 18.0]	15.4% [13.9, 17.1]	16.4% [13.9, 19.2]	17.3% [13.4, 22.1]	10.3% [5.9, 17.2]	14.3% [12.6, 16.2]	19.3% [16.4, 22.5]
Talk about becoming a friend of ethnic communities	11.5% [9.9, 13.2]	10.9% [9.1, 13.0]	11.9% [10.0, 14.1]	15.1% [11.4, 19.8]	8.1% [6.2, 10.7]	10.1% [8.0, 12.7]	13.5% [11.9, 15.3]
Inside of a body and damage	26.1% [23.1, 29.4]	27.9% [25.2, 30.8]	24.4% [20.7, 28.5]	31.1% [24.0, 39.3]	24.7% [19.0, 31.4]	24.6% [20.8, 29.0]	28.1% [25.0, 31.4]
End with word “truth”	35.5% [32.7, 38.4]	38.5% [36.2, 40.8]	32.7% [28.9, 36.8]	43.6% [38.0, 49.3]	33.5% [29.1, 38.1]	33.9% [30.1, 37.9]	37.2% [34.7, 39.8]
“Do you smell smoke?”	10.4% [9.1, 11.9]	9.7% [8.1, 11.7]	11.0% [9.4, 12.8]	13.2% [9.9, 17.5]	7.7% [3.8, 14.7]	8.1% [7.2, 9.1]	13.3% [11.1, 15.9]
Any of the above	65.5% [60.5, 70.2]	67.7% [63.5, 71.7]	63.4% [57.0, 69.5]	71.5% [64.2, 77.8]	68.2% [59.4, 75.9]	66.1% [59.0, 72.5]	64.9% [59.6, 69.8]
High School							
Smoke swirls on screen	24.7% [23.7, 25.8]	25.1% [23.2, 27.1]	24.3% [22.9, 25.8]	25.1% [22.1, 28.3]	25.2% [20.2, 30.9]	24.3% [22.5, 26.2]	24.9% [23.4, 26.3]
Talk about light cigarettes	26.6% [24.3, 29.0]	24.3% [21.5, 27.2]	28.9% [26.7, 31.2]	28.0% [22.7, 34.0]	20.2% [17.9, 22.7]	24.2% [20.9, 27.8]	29.9% [27.5, 32.4]
Talk about becoming a friend of ethnic communities	20.0% [18.6, 21.4]	16.5% [14.7, 18.5]	23.3% [21.6, 25.2]	20.0% [15.3, 25.8]	16.8% [14.8, 18.9]	18.9% [16.2, 22.0]	21.8% [20.6, 23.2]
Inside of a body and damage	24.4% [22.5, 26.4]	24.3% [22.4, 26.4]	24.5% [22.5, 26.7]	31.7% [28.0, 35.7]	25.4% [22.0, 29.0]	22.7% [18.7, 27.3]	23.2% [21.5, 25.0]
End with word “truth”	68.3% [67.1, 69.4]	71.2% [69.9, 72.4]	65.7% [64.2, 67.2]	68.4% [63.6, 72.8]	59.5% [54.8, 64.0]	67.3% [65.1, 69.5]	71.7% [69.9, 73.4]
“Do you smell smoke?”	11.6% [10.5, 12.8]	10.1% [8.8, 11.5]	13.1% [11.9, 14.3]	11.9% [9.3, 15.2]	9.0% [6.7, 12.0]	10.1% [9.0, 11.3]	13.6% [12.2, 15.3]
Any of the above	86.4% [85.6, 87.2]	86.1% [84.7, 87.4]	86.7% [85.4, 87.9]	85.3% [83.2, 87.2]	85.1% [79.8, 89.2]	87.7% [86.1, 89.1]	86.1% [84.9, 87.1]

Note: Brackets contain the 95 percent confidence intervals.

Table 3.8 Exposure to Pro-tobacco Media (Percent Responding "A lot" or "Sometimes")

	See actors using tobacco[1]	See tobacco ads at sport/community events[2]
Middle School		
Overall	78.4% [76.6, 80.1]	48.9% [46.1, 51.8]
Female	77.6% [74.9, 80.1]	48.5% [45.1, 51.9]
Male	79.2% [77.7, 80.7]	49.1% [46.2, 52.0]
Asian/PI	80.6% [77.5, 83.5]	44.5% [40.0, 49.0]
African American	84.1% [80.2, 87.5]	56.5% [44.8, 67.5]
Hispanic/Latino(a)	79.4% [77.2, 81.5]	52.8% [48.6, 56.9]
Caucasian	76.0% [72.8, 78.9]	44.7% [40.9, 48.6]
Non-current Smoker	77.8% [75.9, 79.7]	48.1% [45.0, 51.3]
Current Smoker	87.4% [80.2, 92.2]	59.2% [50.7, 67.2]
High School		
Overall	86.5% [85.6, 87.4]	52.3% [50.9, 53.8]
Female	86.9% [85.5, 88.1]	51.1% [49.1, 53.0]
Male	86.2% [85.0, 87.2]	53.5% [51.4, 55.5]
Asian/PI	84.8% [80.8, 88.2]	49.4% [44.5, 54.4]
African American	87.6% [82.8, 91.2]	49.1% [40.0, 58.2]
Hispanic/Latino(a)	87.4% [86.6, 88.2]	54.2% [52.8, 55.5]
Caucasian	86.1% [85.1, 87.0]	52.0% [50.4, 53.6]
Non-current Smoker	86.2% [85.2, 87.3]	51.5% [49.7, 53.4]
Current Smoker	88.9% [86.8, 90.7]	56.9% [53.5, 60.2]

Note: Brackets contain the 95 percent confidence intervals.
1 Q45. When you watch TV or go to movies, how often do you see actors using tobacco?
2 Q70. When you go to sports events, fairs or community events, how often do you see advertisements for cigarettes or chewing tobacco?

Table 3.9 Tobacco Related Items

	Bought or received tobacco related items last year[1] ("No")	Would wear or use tobacco related items[2] ("Definitely Not")
Middle School		
Overall	87.6% [86.5, 88.7]	56.1% [53.3, 58.8]
Female	90.0% [88.1, 91.6]	59.0% [55.5, 62.5]
Male	85.4% [83.5, 87.1]	53.3% [50.4, 56.2]
Asian/PI	89.4% [85.0, 92.6]	60.6% [57.2, 63.9]
African American	83.4% [75.2, 89.3]	52.4% [45.8, 58.9]
Hispanic/Latino(a)	87.3% [85.0, 89.3]	54.3% [50.0, 58.5]
Caucasian	88.9% [87.4, 90.3]	58.0% [55.6, 60.3]
Non-current Smoker	89.4% [88.5, 90.3]	58.2% [55.3, 60.9]
Current Smoker	54.7% [46.7, 62.4]	25.1% [17.8, 34.1]
High School		
Overall	85.1% [84.4, 85.9]	38.1% [36.6, 39.6]
Female	87.6% [86.9, 88.3]	43.5% [41.7, 45.4]
Male	82.8% [81.2, 84.2]	32.8% [31.4, 34.3]
Asian/PI	88.5% [86.6, 90.2]	41.4% [38.5, 44.3]
African American	88.4% [83.7, 91.8]	39.5% [29.9, 50.1]
Hispanic/Latino(a)	84.0% [82.6, 85.3]	36.0% [34.3, 37.8]
Caucasian	84.6% [82.5, 86.4]	38.4% [36.9, 39.9]
Non-current Smoker	88.1% [87.1, 89.0]	40.6% [39.1, 42.2]
Current Smoker	66.3% [62.7, 69.7]	21.2% [18.4, 24.4]

Note: Brackets contain the 95 percent confidence intervals.
1 Q46. During the past 12 months, did you buy or receive anything that has a tobacco company name or picture (logo) on it?
2 Q47. Would you ever use or wear something that has a tobacco company name or picture (logo) on it such as a lighter, T-shirt, hat or sunglasses?

Normative Expectations

The accuracy of perceived norms about peer tobacco use is one factor used to predict the onset and development of tobacco use (Hansen, 1991). The wording of the question related to assessment of perceived norms of tobacco use changed from 2001-2002 to 2003-2004. The new wording asked whether "most young people" do not smoke cigarettes as opposed to the 2001-2002 wording, which asked about "most young people old enough to go to high school." The percentage of students responding "true" to this question (58.5 percent of students in grade 6 compared to 37.1 percent of students in grade 12) was substantially higher for both age groups, compared to the 2001-2002 data, suggesting a reduction in the perceived prevalence of peer tobacco use. Past literature (e.g., Hansen and Graham, 1991) suggests that reduction in perceived prevalence of peer tobacco use should be accompanied by reduction in use of tobacco reported by the respondents. These results are found in **Table 3.10** below.

Table 3.10 Belief that Most Young People Do Not Use Tobacco

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	58.5% [51.7, 65.0]	62.0% [44.5, 76.8]	42.3% [23.7, 63.5]	57.8% [50.8, 64.6]	63.2% [52.1, 73.1]
7th	53.8% [48.8, 58.8]	49.9% [44.8, 54.9]	59.2% [39.2, 76.6]	49.6% [39.9, 59.2]	58.3% [53.1, 63.4]
8th	43.3% [38.9, 47.8]	45.3% [37.8, 53.0]	35.9% [27.2, 45.8]	38.4% [32.2, 45.0]	51.6% [46.8, 56.4]
9th	41.3% [37.4, 45.4]	42.5% [37.0, 48.1]	52.7% [26.0, 77.9]	33.5% [30.8, 36.3]	46.4% [42.2, 50.7]
10th	38.2% [35.8, 40.6]	45.4% [32.7, 58.8]	40.0% [28.6, 52.6]	29.3% [25.6, 33.3]	43.8% [39.2, 48.4]
11th	37.1% [34.2, 40.2]	35.2% [28.1, 43.0]	35.5% [27.0, 45.0]	28.1% [23.9, 32.8]	46.8% [42.3, 51.2]
12th	37.1% [33.9, 40.3]	36.9% [29.0, 45.6]	42.0% [34.4, 50.0]	27.1% [22.8, 32.0]	43.8% [40.0, 47.7]
Total	42.6% [40.8, 44.5]	43.4% [39.2, 47.7]	44.4% [37.1, 52.0]	35.7% [32.9, 38.6]	48.9% [46.3, 51.5]

Note: Brackets contain the 95 percent confidence intervals.

Exposure to Tobacco Use Prevention Lessons

Between 71.3 percent and 81.0 percent of students through the ninth grade recalled receiving information about tobacco at school. This rate dropped to 67.2 percent in tenth grade and continued to decline throughout high school to 55.3 percent in 11th grade and 47.2 percent of students in 12th grade who recalled being exposed to tobacco information at school. These results are found in **Table 3.11**. Data shows that most of the tobacco lessons were taught in specific classes, such as science, health, and physical education. The disparity in recollection of tobacco lessons may reflect the

courses and grades in which tobacco was a focus. A decline in the rate of students recalling exposure to tobacco in high school was not unexpected. These numbers reflect the entire population of students participating in the survey, including high schools that do not receive tobacco funding. Because all middle schools received entitlement TUPE funding but only some high schools received competitive TUPE grant funding, it stands to reason that students' perceived exposure to TUPE would show a decline with increasing grade. Nonetheless, as suggested in the 2001-2002 IETP report, more research on the validity and reliability of questions asking about exposure to school lessons needs to be conducted to provide a deeper understanding of how students interpret such questions.

Table 3.11 Received Information About Tobacco at School

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	81.0% [78.6, 83.2]	83.3% [76.1, 88.7]	84.0% [76.8, 89.3]	78.5% [72.9, 83.2]	82.6% [76.2, 87.6]
7th	78.4% [76.1, 80.6]	75.7% [61.5, 85.8]	82.7% [68.7, 91.3]	78.8% [76.1, 81.2]	77.9% [74.9, 80.5]
8th	75.1% [69.5, 80.0]	80.5% [73.2, 86.2]	65.2% [44.1, 81.6]	76.8% [71.1, 81.7]	74.5% [70.9, 77.9]
9th	71.3% [63.6, 78.0]	72.9% [62.6, 81.2]	76.5% [54.0, 90.1]	74.0% [65.4, 81.1]	66.9% [59.6, 73.5]
10th	67.2% [62.6, 71.6]	74.0% [69.1, 78.4]	71.8% [64.1, 78.5]	69.5% [62.6, 75.6]	61.4% [56.4, 66.2]
11th	55.3% [52.2, 58.4]	56.0% [47.6, 64.1]	54.1% [46.2, 61.7]	59.3% [55.4, 63.0]	52.2% [49.1, 55.3]
12th	47.2% [44.5, 49.8]	50.3% [43.8, 56.7]	50.2% [45.0, 55.4]	48.5% [45.7, 51.4]	44.3% [39.3, 49.3]
Total	67.6% [65.0, 70.1]	69.0% [65.7, 72.2]	69.4% [63.5, 74.8]	69.7% [66.2, 73.0]	64.5% [61.1, 67.6]

Note: Brackets contain the 95 percent confidence intervals.

About 94 percent of students in sixth grade who recalled that they had been exposed to tobacco use prevention lessons perceived this information to be helpful in making decisions about tobacco use. Across grade levels, the overall proportion of students perceiving the information as helpful was 80.0 percent. These perceptions (shown in **Table 3.12**) declined monotonically with age, with only 61.6 percent of students in grade 12 reporting that tobacco use prevention information was helpful. Ninety-three percent of students in sixth grade reported that information designed to help them feel okay to say “no” to friends who offer cigarettes was helpful. This perceived helpfulness of refusal information fell to 72.8 percent in 12th grade. These numbers were substantially higher than numbers reported in the previous IETP when 78.3 percent of 6th graders and only 33.8 percent of 12th graders reported that the information received at school helped them feel that it was “okay” to say “no” to friends. It appears that the tobacco use

prevention information being provided at schools is boosting students' perceptions of self-efficacy about refusing peer offers of tobacco.

Table 3.12 Tobacco Information Helpful

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	94.3% [91.7, 96.1]	92.5% [74.7, 98.1]	89.5% [76.9, 95.7]	95.6% [92.6, 97.4]	94.3% [91.2, 96.4]
7th	91.4% [90.3, 92.4]	89.3% [83.4, 93.3]	87.9% [71.0, 95.6]	94.0% [91.9, 95.5]	89.6% [85.6, 92.7]
8th	82.7% [80.1, 85.0]	81.1% [68.1, 89.6]	85.2% [79.9, 89.2]	84.7% [79.9, 88.6]	80.1% [75.5, 84.1]
9th	78.9% [75.9, 81.7]	85.2% [80.3, 89.0]	78.7% [63.7, 88.6]	80.8% [76.6, 84.3]	75.3% [71.4, 78.9]
10th	75.1% [71.1, 78.7]	82.1% [76.4, 86.7]	78.6% [69.5, 85.6]	80.6% [76.6, 84.3]	64.9% [60.6, 69.0]
11th	67.3% [63.8, 70.6]	74.5% [67.8, 80.2]	76.8% [65.5, 85.3]	74.2% [69.4, 78.5]	54.6% [48.7, 60.4]
12th	61.6% [58.1, 64.9]	65.8% [54.7, 75.4]	73.0% [63.8, 80.6]	74.7% [67.4, 80.9]	46.7% [42.8, 50.6]
Total	80.0% [78.7, 81.2]	81.9% [79.5, 84.2]	81.7% [77.4, 85.4]	84.2% [82.6, 85.8]	73.9% [70.9, 76.7]

Note: Brackets contain the 95 percent confidence intervals.

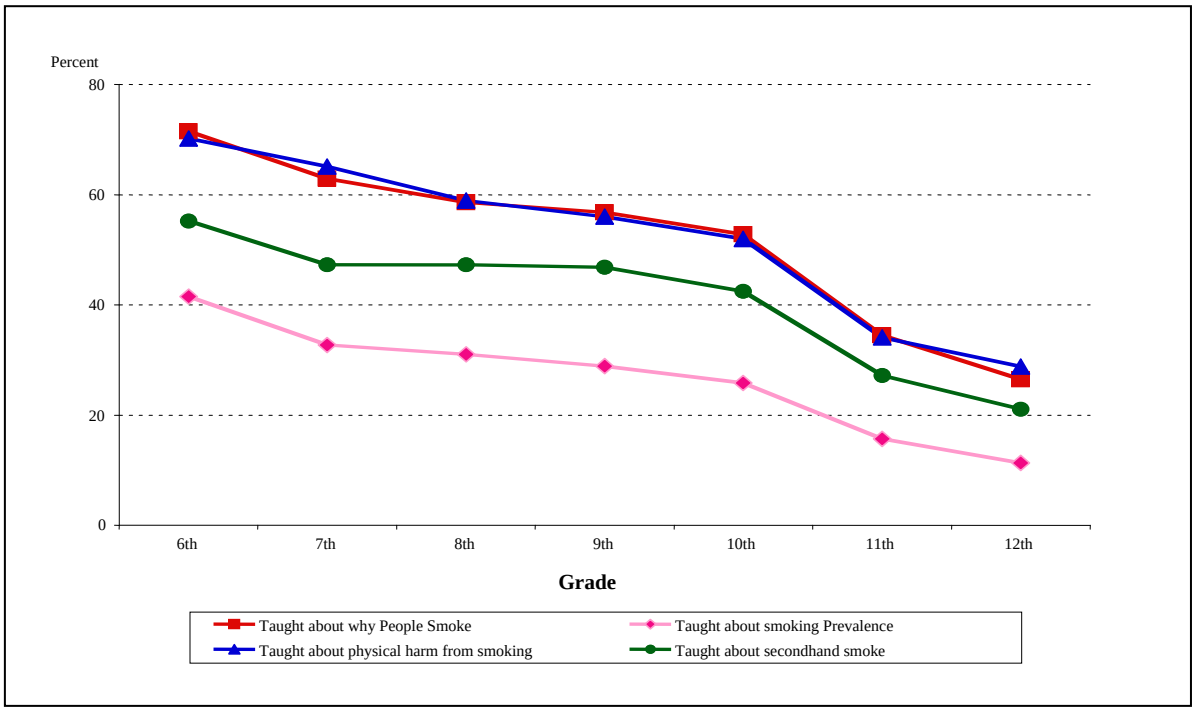
Table 3.13 shows the percentage of students who recalled tobacco lesson topics, by school type, gender, and ethnicity. Overall, fewer high school students recalled exposure to specific tobacco use prevention topics. The results were similar across gender and no consistent patterns emerged for different ethnic groups. **Figure 3.1** shows that the frequency of students who recalled being exposed to selected tobacco use prevention topics decreased with age for all topics. In the 2001-2002 report, a spike in prevalence rates for 9th graders across all topics was observed, which disappeared in the 2003-2004 data. Although students continue to report that the physical harm associated with tobacco use is one of the most popular tobacco use prevention topics taught in their classes, now students are reporting being taught reasons why people smoke almost as frequently. This increased rate of teaching about the reasons why people smoke suggests that teachers increased their use of social influences techniques in their tobacco use prevention lessons.

Table 3.13 Tobacco Lesson Content

Grade	Teacher/ Guest Speaker[1]	Assembly / Event[2]	Why People Smoke[3]	Smoking Prevalence[4]	Physical Harm[5]	Secondhand Smoke[6]
Middle School						
Overall	59.7% [55.7, 63.5]	53.0% [46.7, 59.3]	65.0% [60.6, 69.2]	35.8% [32.7, 39.1]	65.1% [61.9, 68.2]	50.4% [46.7, 54.1]
Female	60.0% [56.3, 63.6]	54.0% [47.9, 60.0]	66.2% [62.4, 69.7]	33.5% [30.2, 36.8]	65.6% [61.7, 69.4]	49.9% [45.1, 54.6]
Male	59.4% [54.5, 64.2]	52.0% [45.2, 58.7]	63.9% [58.5, 69.0]	38.2% [33.9, 42.7]	64.8% [61.0, 68.4]	51.1% [46.8, 55.3]
Asian/PI	67.5% [60.1, 74.1]	53.2% [46.9, 59.4]	70.4% [62.1, 77.4]	39.7% [31.6, 48.4]	71.5% [68.2, 74.5]	54.3% [49.9, 58.6]
African American	52.2% [44.4, 59.9]	48.3% [40.0, 56.8]	59.8% [49.3, 69.4]	30.7% [25.5, 36.5]	58.6% [47.0, 69.3]	49.4% [40.1, 58.8]
Hispanic/Latino(a)	57.4% [51.9, 62.7]	52.0% [43.9, 60.0]	66.2% [60.5, 71.4]	38.3% [33.6, 43.3]	66.3% [61.5, 70.8]	49.2% [44.0, 54.4]
Caucasian	64.5% [58.9, 64.0]	55.1% [49.7, 60.4]	64.1% [60.1, 67.9]	33.4% [30.4, 36.5]	63.4% [60.7, 66.0]	51.0% [47.9, 54.0]
High School						
Overall	39.3% [35.1, 43.6]	29.0% [25.8, 32.4]	44.0% [40.8, 47.3]	21.2% [18.6, 24.0]	44.0% [39.5, 48.5]	35.6% [32.0, 39.4]
Female	41.7% [37.4, 46.2]	29.9% [26.1, 34.0]	45.9% [42.6, 49.2]	20.0% [17.7, 22.4]	45.7% [40.6, 50.9]	36.4% [32.8, 40.1]
Male	37.0% [32.9, 41.4]	28.1% [25.4, 31.1]	42.1% [38.6, 45.7]	22.3% [19.2, 25.8]	42.3% [38.1, 46.7]	34.9% [30.8, 39.2]
Asian/PI	41.6% [37.6, 45.7]	30.7% [27.5, 34.1]	46.3% [40.0, 52.7]	23.2% [20.4, 26.3]	48.0% [42.9, 53.1]	38.5% [34.4, 42.7]
African American	45.9% [34.0, 58.2]	30.8% [23.1, 39.7]	42.1% [37.6, 46.8]	22.1% [17.5, 27.6]	45.1% [37.8, 52.7]	33.8% [28.5, 39.5]
Hispanic/Latino(a)	41.1% [36.3, 46.1]	30.6% [25.7, 35.9]	48.9% [43.8, 54.1]	24.1% [19.2, 29.8]	47.5% [42.2, 52.9]	39.0% [33.9, 44.3]
Caucasian	35.6% [31.2, 40.4]	26.7% [23.7, 30.0]	39.4% [36.8, 42.1]	17.6% [15.6, 19.9]	39.5% [34.9, 44.3]	32.0% [28.2, 36.1]

Note: Brackets contain the 95 percent confidence intervals.
[1] Q56. During the last year (12 months), did your teacher or a guest speaker (for example, a nurse or someone from your community) talk to your class about NOT using tobacco?
[2] Q57. During the last year (12 months), did you go to a school assembly or event about the harmful effects of tobacco use?
[3] Q58. During the last year (12 months), did any of your teachers talk about the reasons why people your age smoke or do NOT smoke?
[4] Q59. During the last year (12 months), did any of your teachers talk about how many people your age do NOT smoke?
[5] Q60. During the last year (12 months), did any of your teachers talk about the effects of cigarette smoking on your body?
[6] Q61. During the last year (12 months), did any of your teachers talk about the effects of secondhand smoke?

Figure 3.1 Frequency of Students Recalling Having Been Exposed to Selected Topics



Current Smokers: Perceptions, Exposure to Secondhand Smoke, and the Media

To look at how social influence is believed to influence tobacco use might be related to current smoking, the items depicted in **Table 3.1** were reduced to factor scores through principal components analysis. The reliability (Cronbach's Alphas) for each of the eight domains ranged from 0.38 to 0.84. For each domain the responses were divided into high, medium, and low categories by dividing the distribution of respondents roughly equally into three groups. **Table 3.14** shows the percent of current smokers falling into the low, medium, and high categories. In general, the results are what would be expected. Across age groups, smoking was inversely related to two social consequence domains: (1) negative social perceptions (smokers do not have more friends and smoking does not make young people look cool), and (2) perceived negative health consequences. More current smokers (8.3 percent in middle school and 19.8 percent in high school) fell into the category of students with low anti-smoking social perceptions (defined as the perception that smokers do not have more friends or that smoking does not make young people look cool) compared to the category of high anti-smoking social perceptions. The pattern was also found for the factor defining perceived negative health consequences of tobacco use.

Table 3.14 Beliefs about Tobacco Use, Secondhand Smoke, and Media Exposure among Current Smokers

	Students Reporting Current Smoking	
	Middle School	**High School**
Anti-smoking Social Perceptions		
Low	8.3% [6.4, 10.5]	19.8% [9.4, 21.4]
Medium	2.4% [1.4, 4.2]	9.4% [8.2, 10.6]
High	1.0% [0.7, 1.5]	8.1% [7.1, 9.2]
Perceived Negative Health Consequences from Smoking		
Low	6.4% [4.9, 8.4]	25.2% [22.8, 27.9]
Medium	2.9% [2.0, 4.4]	12.9% [11.4, 14.6]
High	0.7% [0.4, 1.1]	5.6% [4.8, 6.6]
Exposure to Secondhand Smoke		
Low	1.0% [0.7, 1.7]	3.4% [2.7, 4.2]
Medium	4.4% [3.3, 5.9]	14.1% [12.1, 16.4]
High	12.8% [9.5, 17.2]	30.2% [27.3, 33.2]
Anti-tobacco Industry Beliefs		
Low	4.4% [3.3, 5.9]	19.7% [18.2, 21.4]
Medium	3.9% [2.3, 6.4]	11.8% [10.5, 13.3]
High	3.9% [2.7, 5.5]	9.2% [8.2, 10.2]
Anti-tobacco Media Exposure		
Low	4.4% [3.2, 5.9]	13.3% [11.2, 15.8]
Medium	4.1% [3.0, 5.5]	12.2% [10.9, 13.6]
High	3.4% [2.2, 5.3]	14.3% [12.7, 16.1]
Pro-tobacco Media Exposure		
Low	1.9% [1.2, 3.1]	9.1% [7.6, 10.9]
Medium	3.2% [2.6, 4.0]	10.3% [9.1, 11.5]
High	10.6% [7.9, 14.1]	22.3% [20.2, 24.6]
Recall of Anti-tobacco TV Messages		
Low	2.7% [2.2, 3.2]	13.7% [12.6, 14.9]
Medium	6.0% [4.3, 8.3]	14.4% [12.6, 16.6]
High	3.8% [3.1, 5.0]	11.0% [9.6, 12.5]

Note: Brackets contain the 95 percent confidence intervals.

Awareness of Other Tobacco Activities

In general, more students were aware of school-based peer trainings to help other students stop smoking than were aware of school-based tobacco use cessation classes, regardless of grade, gender, and ethnicity. Fifty-two percent (52.6 percent) of middle school students and 53.9 percent of high school students responded “yes” when queried about whether students their age could be trained to help other students quit using tobacco (see **Table 3.15**). This was a substantial increase from the 2001-2002 findings, where the prevalence of those saying “yes” was under ten percent. Thirty-two percent of high school students compared to 16.6 percent of middle school students knew about school-based tobacco use cessation classes. In general, fewer smokers were aware of peer trainings than non-smokers. Current smokers in middle school (but not high school) were more aware of tobacco use cessation classes than their non-smoking peers. Chapter 7 discusses how student awareness of school-based

tobacco use cessation resources corresponds to teachers' and administrators' perceptions about school-based resources for tobacco use prevention.

Higher percentages (6.4 percent and 25.2 percent) of middle and high school current smokers were grouped into the low category (students do not believe that smoking is harmful) compared to 0.7 percent of middle and 5.6 percent of high school smokers grouped into the high category. Higher percentages of smokers fell into the high category for exposure to SHS (12.8 percent and 30.2 percent) and for exposure to pro-tobacco media (10.6 percent and 22.3 percent) for both middle and high school students, respectively. For high school students, 19.7 percent of smokers fell into the low category for anti-tobacco industry beliefs compared to 9.2 percent in the high group, indicating that current smokers were less likely to hold anti-tobacco industry beliefs. There were no clear response patterns for smokers for either of the domains assessing anti-tobacco media exposure or recall of anti-tobacco TV messages.

Table 3.15 Awareness of Tobacco Quitting Programs at School

	Trained Peer Students[1] (% "Yes")	Tobacco Use Cessation Classes for Students[2] (% "Yes")
Middle School		
Overall……	52.60% [50.2, 54.9]	16.60% [11.6, 23.2]
Female……	52.10% [50.3, 53.9]	13.70% [9.9, 18.8]
Male……	53.00% [49.3, 56.5]	19.10% [12.5, 28.0]
Asian/PI……...	56.60% [52.6, 60.6]	20.10% [12.0, 31.5]
African American……	49.70% [42.5, 56.9]	12.70% [6.8, 22.6]
Hispanic/Latino(a)……	55.10% [52.3, 57.8]	16.00% [10.4, 23.9]
Caucasian……..	49.40% [45.0, 53.8]	16.10% [9.3, 26.4]
Non-current Smoker……	52.90% [50.4, 55.3]	16.20% [11.2, 22.9]
Current Smoker……	44.60% [37.0, 52.6]	19.50% [11.2, 31.7]
High School		
Overall……	53.90% [51.6, 56.2]	32.00% [27.4, 37.0]
Female……	53.60% [51.0, 56.1]	30.60% [25.1, 36.6]
Male……	54.10% [51.4, 56.9]	33.20% [28.4, 38.4]
Asian/PI……...	56.00% [52.8, 59.2]	30.80% [24.6, 37.9]
African American……	58.40% [53.0, 63.6]	32.60% [23.7, 43.0]
Hispanic/Latino(a)……..	55.50% [51.7, 59.2]	28.50% [22.5, 35.3]
Caucasian……...	51.30% [49.3, 53.3]	35.40% [28.4, 43.1]
Non-current Smoker……..	55.20% [52.7, 57.7]	32.90% [28.0, 38.2]
Current Smoker……..	44.80% [41.1, 48.4]	28.30% [23.1, 34.2]

Note: Brackets contain the 95 percent confidence intervals.
[1] Q65. At your school, can students your age be trained to help students who want to quit using tobacco?
[2] Q66. Does your school have any special groups or classes for students who want to quit using tobacco?

Summary

The findings reported in this chapter are consistent with the observed reduction in the prevalence of tobacco use among in-school youth. The vast majority of California's young people continue to report negative perceptions about tobacco use. Additionally, among high school students there appears to be a reduction in exposure to secondhand smoking outside the home and an increase in the percent of youth reporting that none of their close friends smoke. Reductions in both of these social influences are consistent with reductions in tobacco use among youth. New analyses looking at perceived social influences on tobacco use across smoking status categories found differences in the expected direction.

As of 2003, CDE required that schools select one prevention program addressing drugs, alcohol, violence, and tobacco to be implemented with at least 50 percent of an identified target group. It may be too soon to see the results of this new requirement, and the data collected may not be specific enough and/or may not have been asked of students in the target populations. Because decisions about which target groups will receive prevention programs are made at the district level, it is not possible to predict through statewide sampling which grade levels will receive intervention programs.

Based on the abovementioned, it is reasonable to conclude from the results of this statewide assessment of in-school student tobacco use that California student cognitions were generally consistent with low rates of tobacco use, particularly in the younger grades.

References

Botvin, G. J., and A. Eng. 1979. Life skills training: A comprehensive smoking prevention program. New York: Smithfield.

Botvin, G. J., and J. A. Epstein. 1999. Preventing cigarette smoking among children and adolescents. In D. F. Seidman and L. Covey (Eds.) Helping the hard-core smoker: A clinician's guide (pp. 51-71). Mahwah, NJ: Lawrence Erlbaum Associates.

Burton, D., S. Sussman, C. W. Dent, W. B. Hansen, C .A. Johnson, and B. R. Flay. 1989. Image attributions and smoking among seventh grade students. Journal of Applied Social Psychology, 19, 656-664.

Centers for Disease Control and Prevention (CDC). 1994. Guidelines for school health programs to prevent tobacco use and addiction. Morbidity Mortality Weekly Report, 43, 1-18.

CDC. 2001. Youth Tobacco Surveillance – U.S., 2000. Morbidity Mortality Weekly Report –CDC Surveillance Summaries, 50(SS-4), 1-85.

Chassin, L., C. C Presson, J. S. Rose, and S. J. Sherman. 2001. From adolescence to adulthood: Age-related changes in beliefs about cigarette smoking in a midwestern community sample. Health Psychology, 20, 377-386.

Chassin, L., C. C Presson, and S. J. Sherman. 1990. Social psychological contributions to the understanding and prevention of adolescent cigarette smoking. Personality and Social Psychology Bulletin, 16, 133-151.

Flay, B. R. 1993. Youth tobacco use: Risks, patterns, and control. In J. Slade and C. T. Orleans (Eds.), Nicotine addiction: Principles and management. New York: Oxford University Press.

Flay, B. R., J. R. d'Avernas, J. A. Best, M. W. Kersall, and K. B. Ryan. 1983. Cigarette smoking: Why young people do it and ways of preventing it: The Waterloo Study. In. P. Firestone and P. McGrath (Eds), Pediatric and adolescent behavioral medicine (pp. 132-183). New York: Springer-Verlag.

Hansen, W. B. and J. W. Graham. 1991. Preventing alcohol, marijuana, and cigarette use among adolescents: Peer pressure resistance training versus establishing conservative norms. Preventive Medicine, 20, 414-430.

Jessor, R. 1991. Risk behavior in adolescence. A psychosocial framework for understanding and action. Journal of Adolescent Health. 12, 597-605.

McCarthy, W. J., B. Dietsch, T. L. Hanson, C. H. Zheng, and M. Aboelata. Evaluation of the In-School Tobacco Use Prevention Education Program 2001-2002. Sacramento, California: Tobacco Control Section, California Department of Health Services. 2004, 191pp. Accessible at http://www.dhs.ca.gov/tobacco/documents/ietp01-02.pdf.

Peterson, A. V., K. A. Kealey, S. L. Mann, P. M. Marek, and I. G. Sarason. 2000. Hutchinson smoking prevention project: Long-term randomized trial in school-based tobacco use prevention - Results on smoking. Journal of the National Cancer Institute, 92, 1979-1991.

Sussman, S., C. W. Dent, D. Burton, A. W. Stacy, and B. Flay. 1995. Developing school-based tobacco use prevention and cessation programs (p. 42). Thousand Oaks, CA: Sage.

Turner, L., R. Mermelstein, and B. Flay. Individual and contextual influences on adolescent smoking. Annals of the New York Academy of Sciences, 2004, 1021,175-197.

Tyas, S. L. and L. L. Pederson. 1998. Psychosocial factors related to adolescent smoking: A critical review of the literature. Tobacco Control, 7, 4409-4420.

CHAPTER 4

TEACHER-LEVEL DESCRIPTIVE DATA

CHAPTER 4: TEACHER-LEVEL DESCRIPTIVE DATA

CHAPTER HIGHLIGHTS

- **Most California teachers (95 percent) do not currently smoke and are supportive of tobacco-free school policies.**
- **Roughly a third of all teachers, and two-thirds of science, health, and physical education teachers, reported providing some kind of TUPE in the last year; these figures are lower than those in previous years.**
- **Some teachers were unclear about their role in TUPE and the extent of expectations for such education. Less than a fifth of all teachers believed the *district* expected them to provide TUPE lessons, but over half of science, health, and physical education teachers believed the *school* administration expected them to do so. Most teachers who have provided some TUPE lessons report experiencing moderate to high support for doing so.**
- **Although many teachers have mainstreamed tobacco use prevention in their teaching, they continued to rely primarily on conventional teaching methods such as lectures rather than on more interactive methods, such as students role-playing the act of refusing a cigarette. They also continued to focus disproportionately on the physical consequences of tobacco use, even though other topics are likely to have more impact.**
- **Larger proportions of TUPE-eligible teachers reported receiving in-service training than in previous years and only trained teachers reported confidence in their preparedness to teach TUPE lessons; however, many teachers are *not* using or are not aware of specific published model tobacco-use-prevention curricular programs.**
- **Teachers reported lack of time as the chief barrier to providing TUPE; another reported barrier was that TUPE is not a mandated part of their standard curriculum.**

Introduction

This chapter reviews descriptive data obtained from the teachers of the classes of students who participated in the student survey. The information was obtained using an anonymous questionnaire. It queried the teachers about their experience with tobacco use, their motivation to participate in TUPE, and some detailed information about the specific content and strategies that characterize their personal involvement in TUPE.

Lifetime and current rates of smoking reported by teachers

California teachers, as a group, reported low rates of current smoking. One thousand one hundred and twenty-two teachers responded to the survey (95.2 percent response rate) in the high schools and middle schools in which the surveys were conducted. Of these teachers, 1,076 reported their smoking status. Slightly more were men (55 percent) than women (45 percent). Men predominated in the high schools (59.1 percent) whereas women predominated in the middle schools (56.8 percent). The teachers reported an average tenure at their school of 8.7 years, ranging from brand new to over 38 years. Seventy-three percent of the teachers identified their schools as high schools; 27 percent identified their schools as middle schools or junior high schools.

Only 69 of these teachers reported smoking any cigarettes in the last month (7.4 percent). According to the current definition of adult “current smoking,” (persons who report smoking at least 100 cigarettes in their lives and who reported at the time of survey that they currently smoked every day or on some days in the last month), the prevalence rate of current smoking among teachers was 5.4 percent. Fourteen teachers who had not smoked at least 100 cigarettes in their lifetime reported having smoked “some days” in the last month. Notably, 80.8 percent of teachers who reported having smoked at least 100 cigarettes in their lifetime now reported not smoking a single day in the last month. This represents a higher abstinence rate among ever smokers than has been previously reported for United States adults (around 50 percent) (CDC, 2004).

Teacher support for school's no-tobacco use policy

Teachers expressed strong support for their school's no-tobacco use policies. Eighty-nine percent expressed the strongest support possible. Not surprisingly, support for their school's no-tobacco use policy dipped for the few teachers who smoked, but 74.6 percent of “everyday” smokers and 52.8 percent of “occasional” smokers (smoking some days) still expressed the strongest support possible. Teachers with greater tenure at their school were more likely to support the school's no-tobacco use policy than teachers who were new to the school [$F(1, 137)= 4.14$, $p = .04$)].

Teacher reports of past experience teaching TUPE lessons, of administration support for teaching TUPE lessons

Among all teachers surveyed, 31.4 percent [95% CI: 25.8 – 37.8] reported having taught some kind of tobacco use prevention lesson during the last school year. Sampled middle school teachers were approximately three times as likely as sampled high school teachers to report having taught some kind of tobacco use prevention either during the last year or during the current year (OR = 3.1; 95% CI: 1.45 – 6.5). Physical education and health teachers in high school and physical education, health, and science teachers in middle school were particularly expected to teach tobacco lessons. Among these teachers, 63.6 percent [95% CI: 54.2 – 72.1] reported having taught a tobacco use prevention lesson during the last school year, which was lower than the 72.8 percent observed during the preceding Independent Evaluation of TUPE Programs (IETP).

A potential influence on teachers' inclination to teach tobacco use prevention was the degree to which they said that school and district administrators expected teachers to teach tobacco use prevention lessons. Almost two-thirds (61.1 percent) of health education, physical education and science teachers reported that district administrators expected them to teach tobacco use prevention lessons. An additional 24.5 percent reported not knowing whether the district administrators expected them to teach tobacco use prevention lessons. Health education, physical education, and science teachers who reported that district administrators expected them to teach TUPE lessons were nearly twenty times more likely to report having taught a TUPE lesson in the previous year compared to teachers who reported that district administrators did not have this expectation (OR = 19.9, 95% CI: 7.7 – 51.6). Teachers who reported that district administrators expected them to teach TUPE lessons were over four times more likely (OR = 4.4, 95% CI: 1.9 – 10.3) to report having infused their curriculum with TUPE lessons compared to other teachers.

Over half (54.4 percent) of health education, physical education and science teachers reported that school site administrators expected them to include tobacco use prevention lessons in their subjects. However, over one-third (34.8 percent) did not report an expectation to include the lessons. Teachers who reported that their school administrator expected them to teach TUPE lessons were fifteen times more likely to report having taught a TUPE lesson in the previous year compared to teachers who reported that their school site administrator did not have this expectation (OR = 15.2; 95% CI: 6.0 - 38.5). Teachers who reported that their school site administrator expected them to teach TUPE lessons were four times more likely (OR = 4.3; 95% CI: 1.7 – 10.6) to report having infused their curriculum with TUPE lessons compared to teachers who reported no such expectation.

The teachers who reported teaching tobacco use prevention lessons in the current year or in the last school year responded to four-point Likert-scale questions about the level of administrator support for TUPE that they had experienced. These perceived administrator support questions were separate from the questions about what the teachers thought the administrators expected teachers to teach. Choices for the support

questions ranged from “a great deal [of support]” to “not at all.” In general, teachers reported a moderately high level of administrator support. Sixty-five percent of teachers reported getting either moderate or a great deal of support for TUPE from district administrators. Sixty-three percent reported receiving moderate or a great deal of support from school site administrators. As discussed in Chapter 1, district administrators were district-level staff responsible for TUPE, and school site administrators were either the principal, assistant principal, or vice principal at the school.

Infusion of regular curriculum with TUPE messages

Over half of the teachers (54.5 percent) reported that they infused their respective subjects with tobacco use prevention lessons. Middle school and high school teachers were about equally likely (55.6 percent and 59.6 percent respectively) to report infusing their curriculum with tobacco control lessons. These rates are a little higher than national rates recently reported by the National Cancer Institute (NCI) (Crossett et al., cited in NCI, 2001) and higher than what they were in California two years ago (IETP, 2004). Nationally, 55 percent of middle school teachers and 47 percent of high school teachers reported infusing their subject matter with tobacco control lessons.

Students' lack of interest in TUPE could adversely affect teachers' inclination to infuse their subject matter with tobacco control lessons. Fortunately, most teachers (90.1 percent) reported that their students were “moderately” or “very” interested in the tobacco use prevention lessons that they had taught in the last year. Teachers' perceived school-level support for TUPE instruction was associated with the perceived level of student interest. Teachers who reported that their school provided little or no support for TUPE instruction were three times more likely (OR = 3.4; 95% CI: 1.1 – 10.9) to report that their students showed “little” or “no” interest in the TUPE content (21 percent) compared to teachers who reported that their school provided moderate or high support for TUPE instruction (7 percent).

Curriculum Content

Several questions were designed to gather information about the tobacco use prevention curriculum used by 355 teachers during the previous (2001-2002) school year. **Table 4.1** shows the topics that were included in their lessons in rank-order of popularity. The most popular topic for teachers to discuss in their tobacco use prevention lessons was “The effects of tobacco on physical health.” The popularity of this topic stretches back to the earliest days of the first concerted attempts to get young people not to use tobacco (Thompson, 1978). Its continuing popularity seems inconsistent with the paucity of scientific evidence for its utility in dissuading young people from beginning the tobacco use habit (USDHHS, 1994). By contrast, teaching refusal skills and correcting high estimates of peer smoking rates have been found to be consistently helpful in reducing youth smoking (USDHHS, 1994), and yet are discussed only half as often as the effects of tobacco on physical health.

The fourth most popular topic was the influence of tobacco advertising and marketing. This is probably a topic that teachers enjoy in part because exposure to advertising is so ubiquitous in the United States and yet its influence on behavior is seldom discussed in traditional courses. “Effects of secondhand smoke” was another popular topic. Teachers may like discussing SHS in class in part because most teachers are not smokers themselves and so they can relate more to the documented health effects on non-smokers of exposure to secondhand tobacco smoke. The twelve enumerated topics were apparently fairly exhaustive, because only 18 percent of respondents felt compelled to write in additional topics. Fifty-three percent of the write-in topics concerned smokeless tobacco use; another eight percent of the write-in topics concerned the costs of tobacco use and the economics of the tobacco industry. The remaining write-in topics included a disparate laundry list, including: the ethics of marketing a product that kills, the addiction process, the history of tobacco, and the chemical composition of tobacco.

Table 4.1 Major Topics Discussed in Tobacco Use Prevention Lessons, Rank-ordered by Popularity

Curriculum Topic	Prevalence
Effects of tobacco on physical health	77.7% [71.4 – 83]
Reasons why young people use tobacco	55% [47.9 - 61.8]
Effects of SHS	58.3% [52.4 – 64.1]
Influence of tobacco advertising and marketing	57.2% [47.1 – 66.8]
Social consequences of tobacco use	51.6% [41.2 – 62.0]
Social influences that promote tobacco use	49.7% [39.3 – 60.1]
Statistics on prevalence of youth tobacco use	40.4% [33.3 - 48.1]
Behavioral skills for resisting tobacco offers	37.1% [32.4 – 42.1]
General personal and social skills (including goal-setting, problem-solving, communication skills, assertiveness)	31.3% [26.2 – 36.8]
Discussion about other topics, esp. smokeless tobacco use	16.5% [12.3 – 22.0]
How to quit smoking and rates of relapse	16.0% [11.4 – 22.0]
Cigar use: prevalence and dangers	12.1% [7.6 – 18.8]

Note: Brackets contain the 95 percent confidence intervals.

Modes of TUPE instruction

Teachers who taught tobacco use prevention lessons in the previous school year (2002-2003) were asked if they used the following modalities: classroom discussion, small group activities, lectures, role-playing, and student worksheets. The most popular modality was classroom discussion, with 92.8 percent of teachers reporting at least some use of this modality. Lectures were the next most popular modality, with 87.7 percent of teachers reporting that they used lectures at least some of the time in conducting their tobacco use prevention lessons.

Surprisingly, relatively little use was made of role-playing, which is virtually de rigueur in teaching refusal skills and social skills (e.g., Dusenbury et al., 1995). More than half (54.5 percent) said that they did not use role-playing at all when they taught tobacco use prevention. Small group activities and student worksheets were only slightly more popular than role-playing. More than 40 percent (42.8 percent) of teachers said that they did not use student worksheets at all, and 37.7 percent of teachers teaching TUPE lessons reported never using small group activities as a modality. As Dusenbury et al. (1995) noted, one of the consistent features of drug abuse prevention programs determined empirically to be effective is that their educational strategies were interactive, such as the use of role-playing and small-group activities. Related to this is the consensus that peer-to-peer anti-smoking messages were more effective than teacher-to-student anti-smoking messages. Role-playing and small group activities lend themselves to peer-to-peer interactions more so than didactic teacher lectures or teacher-led classroom discussions. The significant differences observed here in teachers' choice of educational modality between classroom discussions and didactic lectures on the one hand and role-playing and small group exercises on the other are therefore surprising. More attention in future in-service training could be focused on the use of non-traditional modalities for teaching TUPE to help teachers feel more comfortable with the use of role-playing and small group activities.

In-service Training on Tobacco Use Prevention Education

Among health, physical education, and middle school science teachers – teachers who are often given the responsibility to teach tobacco lessons – 44.7 percent received some in-service training on TUPE in the last five years, which is an increase over the one third who had received some in-service TUPE training observed in the previous evaluation. More than a quarter (26.3 percent) reported receiving more than one full day of in-service training, 21.5 percent received exactly one full day, and 52.2 percent received less than one day of in-service training. The proportion of trainees who have had at least one full day of training has declined relative to two years ago, even though a greater proportion of eligible teachers now report having at least some TUPE training.

Generally it was only those teachers who had received tobacco use education prevention training who reported feeling well prepared to conduct TUPE lessons. Of health, physical education, and middle school science teachers who reported no in-service training, only 12.5 percent felt they were prepared “a great deal.” By contrast,

a much higher proportion of teachers who reported having some in-service training believed they were prepared “a great deal” (54.3 percent). Those who reported having some in-service training were over eight times more likely to report feeling “a great deal” prepared than teachers who reported receiving no training (OR = 8.4; 95% CI: 3.1 – 22.8).

Barriers to Teaching Tobacco Use Prevention

All respondents were asked to review a list of potential barriers to their teaching of TUPE lessons and to mark those that they thought applied to them. They were also asked to describe additional barriers, as appropriate. **Table 4.2** shows the frequency with which TUPE-experienced teachers endorsed each of nine potential barriers. Approximately 11 percent of these teachers reported that they encountered none of the barriers queried. The most often cited barrier to teaching tobacco use prevention lessons was lack of time (57.4 percent). The second most common barrier cited was that tobacco use prevention was not seen to be a part of the teacher’s curriculum (44.3 percent). Most of the other choices concerned the priority that the district or the school placed on tobacco use prevention, either explicitly or by inadequate provision of materials and training.

Table 4.2 List of Major Barriers, Rank-ordered by Frequency of Mention

Major Barriers	Prevalence
Lack of time	57.4% [49.3 – 65.1]
Prevention is not part of my curriculum	44.3% [39.4 – 49.3]
Prevention is not part of outcomes assessed	34.3% [27.4 – 41.9]
Lack of adequate instructional materials	26.8% [21.9 – 32.3]
I haven't received adequate training	19.8% [14.1 – 27.0]
Prevention is not mandated in my district	14.1% [8.7 – 22.0]
District has not made it a high priority	13.2% [8.6 – 19.6]
None of these barriers	10.6% [7.2 – 15.4]
School has not made it a high priority	7.5% [5.0 – 11.0]
Other barriers	5.0% [2.5 – 9.6]

Note: Brackets contain the 95 percent confidence intervals.

Resources for Tobacco Control

The effectiveness of tobacco control efforts by teachers is affected by the community, and by school tobacco control resources available. In general, only a minority of teachers agreed that key school tobacco control resources were available. For instance, only 26.4 percent said, “Yes,” to the question: “Have you ever received information from your school about where school staff could go if they wanted help in quitting their tobacco use?” A similar percentage of middle school teachers (23.6 percent) said “yes,” that there was an on-campus tobacco use cessation program for students. Sixty-one percent (61.6 percent) of high school teachers asserted that there was an on-campus tobacco use cessation program for students. A significant difference between school types (OR = 3.60, 95% CI: 2.16 – 6.01) was detected. More than half of teachers reported that there was no noticeable change in the availability of TUPE resources compared to the year before (51.7 percent). However, there was nearly unanimous agreement (99.6 percent) that general campus resources, such as school counselors and other special programs that could help students with personal problems such as a drug abuse problem were available, even if tobacco-specific resources were not.

The TUPE-experienced teachers reported a number of episodic TUPE relevant resources (see **Table 4.3**). The most frequently cited activities tended to be nationally-recognized activities adopted by many schools across the country, such as Red Ribbon Week (61.8 percent), the American Cancer Society (ACS) adult tobacco use cessation program, the “Great American SmokeOut” (41.9 percent) and the ACS teen education TUPE program, “Teens Kick Ash” (17 percent). The combined ACS programs were cited by 43.3 percent of TUPE-experienced teachers. Other TUPE activities involved student artwork and essays relevant to tobacco use education (49.9 percent and 24.3 percent, respectively). More conventional health education efforts, such as school assemblies (27.2 percent), the offering of smoking cessation programs (19 percent) and TUPE health education partnerships with local health departments (6.8 percent) were also evident. A miscellaneous category with write-in examples was completed by 13.2 percent of the TUPE-experienced teachers. Their examples included several that involved the use of the school's public address system to convey anti-tobacco messages and several that incorporated TUPE activities in standard academic activities, such as in-class student presentations and school science fairs.

Table 4.3 List of Episodic School TUPE Resources, Rank-ordered by Frequency of Mention

Episodic TUPE Resources	Prevalence
Celebrated drug-free week / red ribbon week	61.8% [49.4 – 72.8]
Displayed anti-tobacco posters (made by students)	49.9% [40.3 – 59.5]
ACS program: "Great American SmokeOut"	41.9% [34.4 – 49.8]
Tobacco Use Prevention Assembly	27.2% [21.6 – 33.6]
Hold a poster, essay (etc.) contest about tobacco use	24.3% [19.6 – 29.6]
Offered smoking cessation programs/classes	19.0% [11.8 – 29.1]
ACS program: "Teens Kick Ash"	17.0% [11.6 – 24.2]
Other anti-tobacco activity	13.2% [8.5 – 19.8]
School sponsored an anti-tobacco club	11.5% [6.1 – 20.6]
Participated in TUPE programs with local health department	6.8% [3.6 – 12.5]
None of the above activities	4.8% [2.2 – 10.4]

Note: Brackets contain the 95 percent confidence intervals.

It is difficult for teachers to involve parents meaningfully in anti-tobacco efforts even though they are recognized as important influences on their children's health-related lifestyle choices. With both parents/guardians typically working, they often report not having the time to be involved in their child's school activities. Teachers are also wary of the possibility of encountering the occasional parent who does not agree with schools teaching their children that their parents' tobacco use habit may be a health hazard to their children as well as to themselves (Moolchan and Mermelstein, 2002).

The teachers' most popular strategies for involving parents are described in **Table 4.4** and are rank-ordered by the percent of teachers who have used each one. Even though only one-third of teachers used it, the teachers' most popular strategy for engaging parents in tobacco use prevention activities was to involve them in homework. Various information-sharing strategies were also endorsed, depending on the strategy, by a quarter or a fifth of the teachers. An eighth or fewer reported using strategies requiring more active involvement of parents, such as asking selected parent experts to speak professionally on the dangers of tobacco use (11.1 percent) or asking them to serve as judges of poster artwork or of written student essays focusing on anti-tobacco messages (12.5 percent). There is an abundance of scientific literature speaking to the importance of parental influences on student tobacco use (e.g., Resnick et al., 1997;

Distefan et al., 1998; Cohen et al., 1997; Turner et al., 2004) but the practical barriers to involving them limit their presence in school-based tobacco use education efforts.

Table 4.4 List of Strategies Used by Teachers to Involve Parents in TUPE Activities.

Strategies to Involve Parents in TUPE Activities	Prevalence
Involved parents in TUPE-related homework	33.9% [26.9 – 41.6]
Distributed handbook to parents with tobacco-free policy in it	27.5% [19.9 – 36.6]
TUPE displays/discussions at Open House/Health Fair or other parent meetings	22.8% [17.4 – 29.3]
Distribute newsletters or educational materials to parents	20.8% [15.3 – 27.7]
Provided information to parents about smoking cessation	17.5% [12.3 – 24.3]
Involved parents in school related TUPE activities (e.g., as judges of poster/essay contests)	12.5% [8.6 – 18.0]
Other strategies – please specify	12.0% [6.0 – 22.6]
Invited parents to be guest speakers on tobacco issues	11.1% [7.2 – 16.5]
Held meetings with parents of student smokers	7.6% [4.3 – 13.1]

Note: Brackets contain the 95 percent confidence intervals.

Most Important Risk Factors for Youth Smoking

TUPE-experienced respondents were asked to rate the magnitude of nine specific risk factors that scientific literature has suggested may contribute to youth smoking. Respondents were also invited to write in their own suggestions. The specific question was “To what extent do you think that the following risk factors influence students to use tobacco?” The response options consisted of a 6-interval Likert scale: “0=Not at all,” “1=Very small extent,” “2=Small extent,” “3=Modest extent,” “4=Great extent,” and “5=Very great extent.”

Table 4.5 shows mean ratings for the nine specific risk factors in rank order of mean magnitude. The data indicates that TUPE-experienced teachers rate peer influence as the greatest single influence on youth smoking. Family members' use of tobacco was the second most important influence. The next three influences, all of which can be characterized as features of the adolescent environment, were rated as having roughly comparable impact: pro-smoking messages, availability of tobacco, and the use of other illicit drugs.

Teachers acknowledged that information obtained via tobacco use education and student academic performance are protective factors against adolescent tobacco use.

Teachers also acknowledged some influence of socio-economic and cultural factors on youth smoking. Only fifteen of the respondents wrote in any additional suggested influences. Some of the suggestions overlapped with the rated items but two additional themes were touched on, namely genetics and personality. Some teachers believe that addictive personalities and genetic susceptibility to addiction or rebelliousness may also contribute to youth smoking. Even those who suggested alternative influences did not rate their importance high relative to the influences previously rated. The most noteworthy observation was that these teachers appear to rate the influence of pro-smoking messages in the media as a more significant risk factor than a lack of exposure to tobacco use education.

Table 4.5 Major Risk Factors for Youth Tobacco Use

Major Risk Factors	Mean of Magnitude of Influence
Friends' use of tobacco	4.41 [4.28 – 4.54]
Family members' use of tobacco	4.20 [4.09 – 4.30]
Pro-smoking media messages	3.82 [3.65 – 3.98]
Availability of tobacco	3.74 [3.53 – 3.94]
Use of other drugs	3.62 [3.33 – 3.90]
Insufficient TUPE	2.84 [2.67 – 3.02]
Performance in school	2.69 [2.52 – 2.86]
Ethnic/cultural background	2.51 [2.26 – 2.75]
Family income	2.44 [2.27 – 2.62]
Other risk factors	2.00 [1.00 – 2.99]

Note: Brackets contain 95 percent confidence intervals.
Note: Response options were – "0=Not at all," "1=Very small extent," "2=Small extent," "3=Modest extent," "4=Great extent," and "5=Very great extent."

Topics for in-service training

For eligible teachers who have not received any TUPE in-service training, professional development or training that covered the basic tenets of tobacco use education as recommended by the CDC (CDC, 1994) or by the U.S. Department of Education appeared to improve teacher preparedness to teach TUPE lessons. Teachers who received TUPE in-service training in the past were asked, "What topics should now be highlighted?" The topics to be highlighted should take advantage of advances in the field and should remedy discrepancies between what teachers currently know and do

and what the field suggests they should now know about effective tobacco use education.

A review of teachers' use of published TUPE curricula generally showed that they were not relying on the best-accepted published curricula for their TUPE lessons, or, for that matter, on ANY published curricula. The questionnaire included 26 specific TUPE-relevant programs, a 27th item called "Other – please specify" and a 28th option called "None of these." Fifty-four percent (54.3 percent) of TUPE-experienced teachers chose "none of these" as their only answer. The next most popular choice was "Other-please specify," which garnered 12.0 percent recognition. Eighty-nine respondents wrote in alternatives, including some out-of-date TUPE programs that have been long abandoned. Others volunteered the fact that they had developed their own idiosyncratic program, based on magazine clippings and inclusion of specific anti-tobacco videos, such as "Death in the West." Several respondents suspected that they had used one of the established published programs but admitted not knowing the name of the program that they had taught from. None of the remaining alternatives garnered more than three mentions.

Of the specific published programs that were rated, the most often mentioned one was Project Alert (6.77 percent), followed by one or more programs developed by ACS (6.44 percent), by the American Lung Association (ALA) (6.21 percent), by "your" school district (4.40 percent), or by the American Heart Association (AHA) (3.94 percent). "Here's looking at you, 2000" was mentioned by 4.85 percent. "Towards No Tobacco Use (TNT)" was mentioned by 2.69 percent. The Sacramento County Office of Education was credited as the author by 2.44 percent. All other specific programs garnered less than two percent of the responsers, including programs on the list of CDC- or U.S. Department of Education-approved programs.

TUPE-experienced teachers might not know the names of published TUPE curricula because they had not received training to deliver a specific published tobacco use prevention curriculum. In fact, only 17.5 percent of TUPE-experienced teachers reported getting trained to deliver a specific published tobacco use prevention curriculum in the last five years. An additional 2.4 percent simply said that they did not remember if their TUPE training included training to deliver a specific published TUPE program.

The minority of teachers who did receive professional development training were asked about the content of their training. Respondents were queried about five general areas of relevance to TUPE and were also given the option to write in a general topic area in which they received training. **Table 4.6** lists these areas of professional development training and the number of hours of training obtained over the last five years as reported by TUPE-experienced teachers. The TUPE-specific training opportunities were clearly less popular than the more generic youth development trainings, which may reflect teacher preference, but only a minority of TUPE-experienced teachers appeared to have attended any of these health-related professional development trainings in the last three years. The collected data was not informative enough to determine whether small

numbers reflected a preference of teachers to attend other kinds of trainings or difficulties in matching teacher availability with training opportunity. Given the empirical relationship between exposure to TUPE training and teacher preparation to teach TUPE lessons with confidence, it would seem beneficial to find more effective ways compared to those that have been tried thus far to expose a higher proportion of TUPE teachers to TUPE-relevant professional development training.

Table 4.6 Major Areas of Professional Development Training and Average Hours of Training Received

Major Area of Professional Development Training	Percent Who Received Training	Mean Number of Hours	Number of Participants
Developmental assets	20.2% [13.0 – 30.0]	6.6 hours	157
Youth development	19.9% [13.7 – 27.8]	9.4 hours	163
Science-based prevention and intervention programs	21.6% [15.4 – 29.3]	4.7 hours	125
Readiness to quit programs	7.1% [3.8 – 13.0]	3.9 hours	66
Tobacco use cessation programs	8.1% [4.7 – 13.8]	2.7 hours	73
Other: specify	2.7% [1.3 – 5.8]	10.0 hours	48

Note: Brackets contain 95 percent confidence intervals.

Summary

Schools have long been the targets of public health advocates for preventing tobacco use onset among children, and for good reason. About 90 percent of California school-age children attend public schools. Public school teachers are highly respected by children and are the most commonly observed adult models for most children other than their adult family members. Most teachers (89 percent) in California appear to be supportive of tobacco-free school policies but fewer than 33 percent of all TUPE eligible teachers felt well prepared to teach TUPE lessons. Fifty-four percent of TUPE-eligible teachers who had received some TUPE training reported feeling well prepared to teach TUPE lessons. Nevertheless, further training and training on topics unfamiliar to TUPE instructors (such as refusal skills training) would be beneficial.

Encouragingly, very few teachers are current smokers. At a minimum, California's public school students see little evidence that smoking is popular among their teachers. The impressively low rates of tobacco use by teachers helps to reinforce a message implicit in most tobacco use prevention programs - namely, that cigarette smoking is not normative behavior among adults.

Analytical results suggest an association between teachers' perceptions of school-level support and their perception of students' level of interest in TUPE content. This finding implies that it is important for TUPE instruction to have well-publicized support from school and district administrators.

Teachers should be encouraged to educate their students about the typical misrepresentations of pro-smoking messages and about ways in which students can learn to be more critical consumers of commercial messages. Such encouragement should, among other things, include in-service TUPE training that addresses how teachers can combat pro-tobacco media messages.

Teachers can do more than just model abstinence, but they will need more exposure to training opportunities, more support from district and school personnel, and greater clarity from the state regarding TUPE as a priority. Possibly the most obvious and helpful resource would be the provision of more targeted and more frequent in-service training in how to teach TUPE. Chapters 7 and 8 describe some of the school and district-level influences that modulate teachers' impact on their students' tobacco use behaviors and attitudes.

References

Centers for Disease Control and Prevention (CDC). 1994. Guidelines for school health programs to prevent tobacco use and addiction. Morbidity and Mortality Weekly Report, 43(RR-2), 1-18.

CDC. 2002. Cigarette smoking among adults – U.S., 2000. Morbidity Mortality Weekly Report, 51, 642-645.

Cohen, D. A., J. Richardson, and L. Labree. 1994. Parenting behaviors and the onset of smoking and alcohol use – A longitudinal study. Pediatrics, 94, 368-375.

Crossett, L. S., S. A. Everett, N. D. Brener, J. A. Fishman, and T. F. Pechacek, (in press). Adherence to CDC Guidelines for School Health Programs to Prevent Tobacco Use and Addiction. Journal of Health Education.

Distefan, J. M., E. A. Gilpin, W. S. Choi, and J. P. Pierce. 1998. Parental influences predict adolescent smoking in the United States, 1989-1993. Journal of Adolescent Health. 22, 466-474.

Dusenbury, L. and M. Falco, et al. 1995. Eleven components of effective drug abuse prevention curricula. Journal of School Health, 65, 420-425.

Evans, N., A. Farkas, E. Gilpin, C. Berry, and J. P. Pierce. 1995. Influence of tobacco marketing and exposure to smokers on adolescent susceptibility to smoking. Journal of the National Cancer Institute, 87, 1538-1545.

Flay, B. R., F. B. Hu, O. Siddiqui, L. E. Day, D. Hedeker, J. Petraitis, J. Richardson, and S. Sussman. 1994. Differential influence of parental smoking and friends smoking on adolescent initiation and escalation of smoking. Journal of Health and Social Behavior, 35, 248-265.

Gilpin, E. A., S. L. Emery, A. J. Farkas, J. M. Distefan, M. M. Caucasian, and J. P. Pierce. 2001. The California Tobacco Control Program: A decade of progress, Results from the California Tobacco Survey, 1990-1999. San Diego, CA: University of California.

Independent Evaluation of TUPE Programs Research Group. Independent Evaluation of TUPE Programs 2001-2002. Sacramento, CA. 2004. Accessible at: http://www.dhs.ca.gov/tobacco/documents/ietp01-02.pdf. Last accessed: November 12, 2004.

Moolchan, E. T. and R. Mermelstein. 2002. Research on tobacco use among teenagers: Ethical challenges. Journal of Adolescent Health, 30, 409-417.

National Cancer Institute (NCI). 2001. Changing adolescent smoking prevalence. Where it is and why. NCI Monograph. Washington, D.C: U.S. Department of Health and Human Services.

Resnick, M. D., P. S. Bearman, R. W. Blum, K. E. Bauman, K. M. Harris, J. Jones, J. Tabor, T. Beuhring, R. E. Sieving, M. Shew, M. Ireland, L. H. Bearinger, and J. R. Udry. 1997. Protecting adolescents from harm - Findings from the National Longitudinal Study on Adolescent Health. Journal of the American Medical Association. 278, 823-832.

Thompson, E. L. 1978. Smoking education program, 1960-1976. American Journal of Public Health, 68, 250-257.

Turner, L., R. Mermelstein, and B. Flay. 2004. Individual and contextual influences on adolescent smoking. Adolescent brain development: Vulnerabilities and opportunities. Annals of the New York Academy of Sciences. 1021, 175-197.

U.S. Department of Health and Human Services (USDHHS). 1994. Preventing tobacco use among young people: A report of the Surgeon General. Atlanta, GA: USDHHS, Public Health Service, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

CHAPTER 5

TUPE COMPETITIVE GRANT FUNDING, PROGRAM EXPOSURE AND STUDENT TOBACCO USE

CHAPTER 5: TUPE COMPETITIVE GRANT FUNDING, PROGRAM EXPOSURE AND STUDENT TOBACCO USE

CHAPTER HIGHLIGHTS

- **TUPE funding grantee status and duration of funding are imperfectly measured but have the potential for providing a rough order of magnitude related to the impact of TUPE programs.**
- ***High* schools with competitive TUPE grants were more likely than non-grantee high schools to offer tobacco use cessation services to students, sponsor school-wide anti-tobacco activities (according to *teacher* report), and provide science-based tobacco use prevention instruction training to teachers and school coordinators.**
- **Grantee *high* schools were not significantly different from non-grantee high schools on several aspects of TUPE program implementation (such as no-tobacco-use-on-campus policy, consequences of violation, tobacco instruction, and topics covered). Grantee *middle* schools were not distinguishable from non-grantee middle schools on prevention/intervention services or TUPE program implementation.**
- **Students attending middle and high schools with competitive TUPE grants were equally likely to recall exposure to tobacco use prevention services and have similar tobacco use patterns as students attending non-grantee schools. The only exception involved students in TUPE-grantee *high schools,* who reported significantly higher exposure to tobacco use cessation training and classes compared to those in non-grantee high schools.**
- **Even after adjusting for potential confounding factors such as school socio-economic status and taking into account school *duration* of TUPE grant, students in grantee vs. non-grantee schools were not significantly different in terms of tobacco use or precursors to use (such as intent to smoke, ease of cigarette refusal, anti-smoking social perceptions).**

Introduction

Since 1994 CDE has allocated school-based tobacco use prevention funds to school districts using two different mechanisms: 1) an entitlement program that allocates funds for tobacco use prevention for programs in grades 4 through 8, and 2) a competitive grant program that allocates funds to selected districts for grades 9 through 12. Since 2001, CDE has also offered competitive grants to middle schools to replicate proven effective tobacco use prevention programs. This chapter focuses on the middle school and high school competitive grant programs. It examines differences in program implementation, program exposure, student tobacco use, and factors associated with student tobacco use (precursors) across middle and high schools that have been awarded competitive TUPE grants and those that have not been awarded such grants.

It is important to note that it is not just schools with competitive TUPE grants that provide tobacco use prevention services to high school students. Most districts in the State receive funding from the Federal Safe and Drug Free Schools Program (Title IV), which requires that schools provide tobacco use prevention services to all students. In addition, lessons about tobacco use are a common component of most health education curricula. Although many schools in California provide tobacco use prevention activities without using TUPE funds, the competitive TUPE program provides the bulk of funding for tobacco use prevention and intervention services to high schools in the State.

It is also possible that schools with competitive TUPE grants differ from those without such grants in ways that are not directly related to TUPE activities. **Table 5.1** shows demographic characteristics of grantee and non-grantee schools based on information from CBEDS. Overall, grantee and non-grantee schools were roughly similar in terms of student demographics – student enrollment; the proportion of Asian, African American, and Hispanic/Latino(a) students; the proportion of students who receive CalWORKs support; and academic achievement test scores. Two differences, however, were apparent: 1) grantee middle schools had higher percentages of Caucasian students than non-grantee middle schools (58.8 percent vs. 40.0 percent; $p = 0.02$) and 2) grantee high schools had lower percentages of students receiving subsidized meals compared to non-grantee high schools (27.3 percent vs. 34.7 percent; $p = 0.03$). In addition, grantee high schools exhibited higher levels of parental education than non-grantee high schools (3.0 vs. 2.8), although this difference was not statistically significant at conventional levels ($p < .07$). To the extent that anything can be generalized about the pattern of numbers displayed in Table 5.1 – it appears that grantee schools, particularly middle schools, were slightly more affluent than their non-grantee counterparts. These differences between grantee and non-grantee schools may be responsible for some differences in student tobacco use across grantee and non-grantee schools.

It is also important to note that the vast majority of middle schools sampled did not have a competitive grant – only about 10 percent, 11 schools total, received such a grant. Such a small number of grantee middle schools limited our ability to detect all but the largest differences in program implementation and student tobacco outcomes across

grantee and non-grantee middle schools. Subsequent hypothesis-testing analyses comparing TUPE grantee schools to non-grantee schools were statistically corrected to account for these pre-existing demographic differences.

Table 5.1 Demographic Characteristics of Non-Grantee and Grantee Schools

	Non-grantee	Grantee	p-value
Middle Schools			
Student Enrollment	1,040 (437)	1,091 (423)	0.71
African American (%)	7.0 (9.0)	6.1 (11.9)	0.79
Hispanic/Latino(a) (%)	38.5 (27.0)	24.9 (25.7)	0.11
Caucasian, non-Hispanic/Latino(a) (%)	40.0 (26.8)	58.8 (28.0)	0.02*
CalWORKs Recipients (%)	8.1 (9.9)	7.5 (8.1)	0.83
Subsidized Meals (%)	39.9 (27.3)	31.5 (22.8)	0.33
Academic Performance Index (standardized achievement test scores)	708.1 (96.0)	735.5 (114.3)	0.38
Parental Education (1=less than high school, 5=graduate degree)	2.9 (0.7)	3.2 (0.8)	0.21
Number of schools	94	11	
High Schools			
Student Enrollment	2,180 (848.9)	2,210 (759.0)	0.82
African American (%)	7.3 (9.3)	9.1 (11.4)	0.27
Hispanic/Latino(a) (%)	38.8 (24.0)	33.0 (22.7)	0.12
Caucasian, non-Hispanic/Latino(a) (%)	43.0 (25.9)	38.1 (24.4)	0.23
CalWORKs Recipients (%)	7.7 (7.8)	6.6 (8.7)	0.41
Subsidized Meals (%)	34.7 (21.1)	27.3 (20.2)	0.03*
Academic Performance Index (standardized achievement test scores)	662.8 (64.2)	677.4 (93.3)	0.27
Parental Education (1=less than high school, 5=graduate degree)	2.8 (0.5)	3.0 (0.7)	0.06
Number of schools	71	85	

Note: Parentheses contain standard deviations.
* $0.01<p<0.05$

Program Implementation in TUPE-Grantee and Non-Grantee Schools

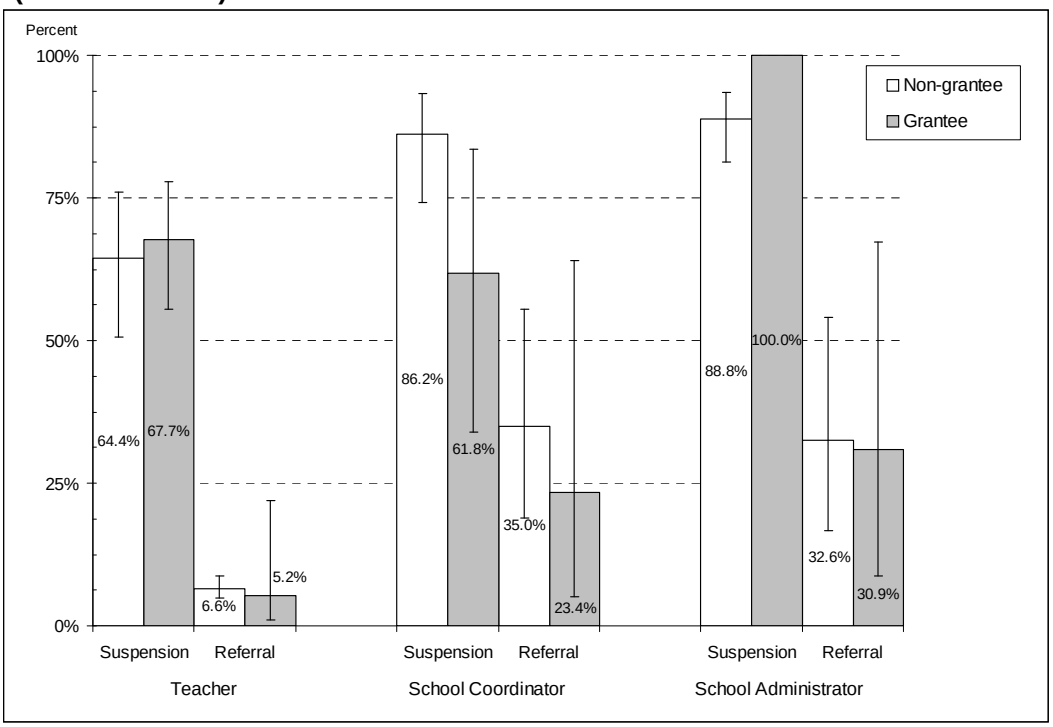
Tables 5.2-5.5 show teacher, TUPE/health school coordinator, and school administrator reports of various measures of program implementation by TUPE grantee status for middle schools. **Tables 5.6-5.9** show similar measures for high schools. The implementation measures can be grouped into four areas: 1) enforcement of no-tobacco-use-on-campus policies and consequences of violation of no-tobacco-use-on-campus policies, 2) TUPE instruction, 3) school-wide anti-tobacco activities, and 4) tobacco use cessation activities. Grantee and non-grantee differences in implementation are compared across these areas in turn. The order of these four areas does not match the order of the tables. And the titles of areas 2 and 4 do not match well with the table titles.

Enforcement of No-Tobacco-Use-on-Campus Policy and Consequences of Violation

Overall, there were few significant differences between grantee and non-grantee schools in reports of the level of enforcement of student violations of no-tobacco-use-on-campus policies. The majority of respondents reported that no-tobacco-use-on-campus policies were enforced “a great deal,” with the highest levels of enforcement reported by school principals. In only one case was there a significant difference between grantee and non-grantee schools in enforcement of no-tobacco-use-on-campus policies: middle school teachers in grantee schools reported higher levels of enforcement (91.9 percent) than their counterparts in non-grantee schools (75.1 percent) (see Table 5.2). This difference however, was not evident based on the reports of site coordinators or principals in middle schools, or of respondents in high schools.

Figure 5.1 and Table 5.2 display grantee/non-grantee differences in school responses to student violations of the no-smoking policy in middle schools. Overall, there were no significant differences in school responses across grantee and non-grantee schools. The pattern was somewhat different in high schools, as shown in **Figure 5.2** and Table 5.6. According to school TUPE/health coordinators in high schools, grantee schools were more likely to refer students who violated the no-smoking policy to tobacco use cessation services than non-grantee schools. Approximately 82 percent of school coordinators in grantee high schools reported that students who are caught smoking cigarettes at school are referred to tobacco use cessation services, compared to 49 percent of coordinators in non-grantee schools. This difference was also evident based on the reports of school principals.

Figure 5.1 Consequences of Violation of No-Tobacco Use Policy by Grantee Status (Middle Schools)



Tobacco Use Prevention Instruction

Few differences were apparent between grantee and non-grantee high schools in teacher reports of tobacco instruction provided to students. Teacher reports pertaining to tobacco instruction come from health and science teachers – teachers of other subjects were excluded from the analyses because very few of them would be expected to teach tobacco-related lessons. In both middle and high schools, science and health teachers were equally likely to provide tobacco use prevention lessons in grantee and non-grantee schools. They were also equally likely to rely on a published or science-based curriculum and to cover the same topics in their lessons (see Table 5.2). For the most part, school coordinator reports of tobacco-related instruction did not differ by grantee status. There was only one *unexpected* difference by grantee status: middle school science/health teachers and coordinators provided more hours of tobacco use prevention instruction in non-grantee schools than in grantee schools (9.6 vs. 4.4; $p = 0.03$ for science/health teachers; 17.2 vs. 3.6; $p = 0.02$ for coordinators).

Table 5.2 Middle School Teacher, Principal, and Coordinator Reports of Prevention/Intervention Policies and Tobacco Instruction by School TUPE Grantee Status

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
No-Tobacco-Use-on-campus Policy						
Enforcement (A great deal)	75.1% [69.6, 79.8]	91.9%* [79.9, 97.0]	79.3% [48.7, 93.9]	70.2% [32.5, 92.0]	91.0% [62.9, 98.4]	100%
Consequences of Violation						
Suspension/ Expulsion	64.4% [50.7, 76.1]	67.7% [55.5, 77.8]	86.2% [74.1, 93.2]	61.8% [33.9, 83.6]	88.8% [81.3, 93.5]	100%
Referral to tobacco use cessation services	6.6% [4.8, 8.8]	5.2% [1.0, 21.9]	35.0% [19.0, 55.4]	23.4% [5.0, 64.0]	32.6% [16.7, 54.0]	30.9% [8.8, 67.2]
Tobacco Instruction						
Lessons	61.5% [55.0, 67.6]	55.0% [33.7, 74.5]	60.9% [47.5, 72.7]	40.1% [15.7, 70.7]	- -	- -
Hours taught	9.6 [5.6, 13.7]	4.4* [1.7, 7.0]	17.2 [6.9, 27.6]	3.6* [0, 7.3]	- -	- -
Published curriculum	32.0% [24.9, 40.0]	34.9% [14.2, 63.3]	- -	- -	- -	- -
Science-based curriculum	33.5% [28.0, 39.5]	42.8% [23.2, 64.9]	40.5% [21.6, 62.7]	24.2% [8.1, 53.6]		

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Table 5.3 shows no differences between grantee and non-grantee middle schools in terms of the tobacco control topics covered in TUPE classes, with the exception of tobacco use cessation. As a resource-intensive activity, smoking cessation programs were more likely to be offered at schools supported by tobacco control funds than at schools without such funds. It should not be surprising that the teachers at TUPE grantee schools reported nearly twice the likelihood (OR = 2.07; 95% CI: 0.98 – 4.39) of covering tobacco use cessation in their classes compared to teachers at schools without TUPE grant funds.

Table 5.3 Middle School Teacher, Principal, and Coordinator Reports of Prevention/ Intervention Curriculum Topics by School TUPE Grantee Status

	Teacher		Coordinato		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
Tobacco and health	60.4% [54.0, 66.5]	63.6% [43.3, 80.0]	77.2% [62.6, 87.3]	79.5% [39.6, 95.8]	- -	- -
Smoking prevalence	35.5% [25.1, 47.4]	32.2% [19.1, 48.8]	65.9% [53.1, 76.7]	75.5% [37.7, 94.0]	- -	- -
Reasons why people smoke	42.9% [36.7, 49.4]	35.2% [22.3, 50.6]	69.7% [56.2, 80.5]	75.5% [37.7, 94.0]	- -	- -
Social consequences	35.3% [22.3, 51.0]	31.0% [13.7, 56.0]	69.4% [56.2, 80.0]	70.3% [34.1, 91.2]		
SHS	52.8% [44.7, 60.8]	51.8% [32.4, 70.6]	70.9% [57.1, 81.6]	79.5% [39.6, 95.8]	- -	- -
Social influences	33.3% [22.7, 45.8]	37.0% [16.1, 64.2]	74.1% [65.7, 81.1]	79.5% [39.6, 95.8]	- -	- -
Behavioral skills	38.2% [34.4, 42.2]	40.2% [22.8, 60.6]	68.7% [54.9, 79.8]	70.3% [34.1, 91.6]	- -	- -
General social skills	33.2% [28.5, 38.3]	27.8% [12.8, 50.4]	62.3% [48.9, 74.1]	64.0% [29.1, 88.5]		
Tobacco use cessation	11.4% [17.1, 17.8]	21.1% [13.2, 31.8]	35.6% [18.1, 58.0]	15.9% [2.3, 60.7]	- -	- -
Tobacco advertising	41.0% [37.1, 45.0]	43.8% [30.5, 58.1]	72.3% [63.0, 80.1]	65.9% [39.7, 85.0]	- -	- -
Cigar use	15.3% [6.3, 32.5]	15.4% [7.9, 27.8]	30.3% [15.2, 51.3]	24.6% [6.1, 62.3]	- -	- -

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Table 5.4 Middle School Teacher, Principal, and Coordinator Reports of Professional Development/Trainings by TUPE Grantee Status

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
In-service training	42.9% [35.6, 50.6]	42.6% [30.0, 56.3]	- -	- -	- -	- -
Developmental asset Training	14.0% [8.8, 21.6]	19.4% [6.6, 45.2]	45.1% [25.4, 66.4]	44.4% [13.1, 80.9]	- -	- -
Youth devel. training	12.0% [7.5, 18.7]	17.3% [6.9, 37.3]	58.9% [41.4, 74.4]	90.0% [51.9, 98.7]	- -	- -
Science-based prevent. train	22.2% [13.7, 33.7]	30.2% [16.6, 48.5]	48.6% [26.9, 70.9]	43.2% [14.1, 78.0]	- -	- -
Readiness to quit training	5.9% [2.4, 13.7]	0% [—]	28.9% [12.3, 54.2]	24.8% [4.9, 67.7]	- -	- -
Tobacco use cess. programs	8.8% [4.0, 18.5]	3.0% [0.5, 17.2]	25.9% [10.5, 51.1]	17.5% [3.4, 56.2]	- -	- -
Preparedness (a great deal)	25.3% [16.3, 37.0]	33.1% [18.8, 51.4]	37.1% [19.2, 59.6]	16.3% [3.3, 52.4]	- -	- -

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Table 5.5 Middle School Teacher, Principal, and Coordinator Reports of School-Wide Anti-tobacco Activities by TUPE Grantee Status

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
School-Wide Anti-tobacco Activities						
Teens Kick Ash	10.4% [8.8, 12.2]	10.3% [2.8, 30.8]	33.3% [27.0, 40.3]	25.2% [5.6, 65.7]	36.3% [28.7, 44.7]	27.8% [8.6, 61.2]
Smoke Out	34.3% [27.7, 41.5]	39.2% [20.3, 62.1]	49.4% [40.1, 58.8]	25.2% [5.6, 65.7]	48.3% [38.8, 57.9]	52.0% [25.3, 77.6]
Assembly	18.2% [10.8, 29.0]	23.7% [13.4, 38.3]	46.7% 38.0, 55.6]	31.3% [8.6, 68.8]	49.2% [37.1, 61.4]	38.2% [12.7, 72.3]
Contest	22.6% [16.1, 30.7]	29.1% [11.6, 56.3]	44.7% [27.2, 63.8]	61.4% [27.3, 87.1]	50.3% [32.0, 68.6]	78.6% [47.3, 93.7]
Anti-tobacco club	4.8% [1.0, 20.2]	10.2% [3.4, 26.8]	16.0% [10.0 24.5]	43.1% [14.3, 77.6]	16.9% [10.3, 26.4]	27.5% [7.4, 64.3]
Local health department	3.3% [1.0, 10.0]	3.5% [0.6, 18.9]	9.5% [4.6, 18.9]	0% [—]	9.4% [5.1, 16.7]	5.7% [0.7, 33.2]
Anti-tobacco posters	48.6% [41.8, 55.6]	35.5% [21.2, 53.0]	68.8% [58.5, 77.6]	32.9% [11.9, 64.1]	67.5% [54.7, 78.1]	73.6% [39.1, 92.4]
Red Ribbon Week	59.5% [46.3, 71.4]	74.5% [51.1, 89.1]	87.6% [77.4, 93.5]	68.4% [43.9, 85.7]	88.0% [80.8, 92.7]	78.3% [42.5, 94.7]
Number of activities	2.1 [1.9, 2.3]	2.3 [1.4, 3.2]	3.8 [3.4, 4.2]	2.8 [1.7, 4.0]	3.9 [3.5, 4.3]	3.9 [2.9, 4.9]
Tobacco Use Cessation Activities						
Tobacco use cessation	6.3% [3.5, 11.0]	3.6% [0.4, 24.0]	25.5% [11.3, 47.9]	0% [—]	5.5% [2.4, 12.0]	0% [—]
Referral to tobacco use	3.2% [2.1, 4.9]	2.9% [0.4, 17.8]	16.2% [4.8, 42.3]	8.7% [1.1, 44.1]	- -	- -

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Figure 5.2 Consequences of Violation of No-Tobacco Use Policy by Grantee Status (High Schools)

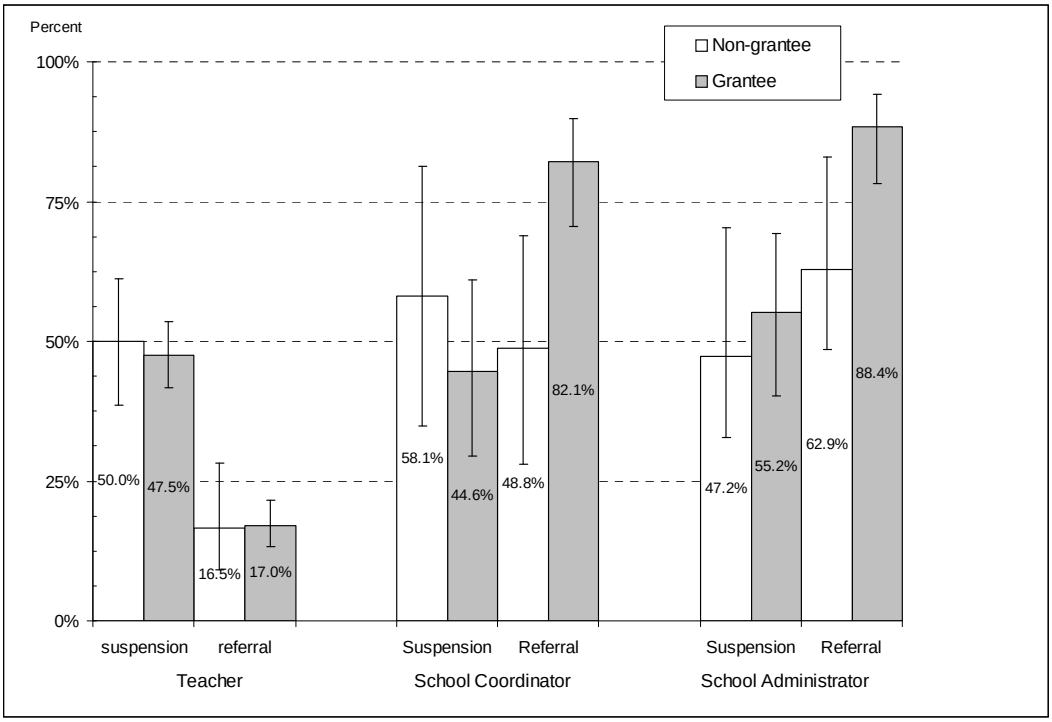


Table 5.6 High School Teacher, Principal, and Coordinator Reports of Prevention/Intervention Policies and Tobacco Instruction by School TUPE Grantee Status:

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
No-Tobacco-Use-on-Campus Policy						
Enforcement (a great deal)	69.8% [58.8, 79.0]	78.2% [73.7, 82.2]	78.2% [63.3, 88.2]	69.3% [49.2, 84.0]	89.0% [72.6, 96.1]	91.0% [68.9, 97.9]
Consequences of Violation						
Suspension/ expulsion	50.0% [38.7, 61.3]	47.5% [41.7, 53.5]	58.1% [34.9, 78.2]	44.6% [29.4, 60.9]	47.2% [26.5, 68.9]	55.2% [40.2, 69.2]
Referral to tobacco use cessation services	16.5% [9.0, 28.3]	17.0% [13.3, 21.6]	48.8% [28.0, 70.1]	82.1%** [70.5, 89.8]	62.9% [48.5, 75.3]	88.4%** [78.1, 94.2]
Tobacco Instruction						
Lessons	62.7% [35.5, 83.7]	58.3% [37.5, 76.5]	62.4% [40.7, 80.0]	53.6% [37.3, 69.2]	- -	- -
Hours taught	11.1 [4.7, 17.4]	14.6 [7.0, 22.2]	11.9 [5.9, 17.9]	16.7 [12.0, 21.3]	- -	- -
Published curriculum	36.8% [13.7, 68.1]	35.3% [18.6, 56.0]	- -	- -	- -	- -
Science-based curriculum	29.9% [13.0, 54.9]	21.6% [9.3, 42.6]	37.4% [22.1, 55.7]	32.7% [22.1, 45.5]		

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Table 5.7 shows that the above absence of topic difference between grantee and non-grantee middle schools was replicated in analyses of curriculum topics in grantee and non-grantee high schools. The one exception was a greater tendency for teachers to report discussing cigar use in non-grantee schools compared to grantee schools (OR = 6.64; 95% CI: 0.63 – 69.99).

With regards to tobacco use prevention instruction, the major difference between staff in grantee and non-grantee schools was in training and preparedness, and this difference was only evident in high schools (see Tables 5.4 and 5.8). As shown in **Figure 5.3**, teachers in grantee high schools were more likely to report having received science-based prevention training during the five years prior to the survey.

About 28 percent of teachers in grantee schools reported receiving such training, compared to about three percent of teachers in non-grantee schools (see Table 5.8). Also, teachers and coordinators in grantee schools reported substantially higher levels of preparedness to teach tobacco use prevention lessons than their counterparts in non-grantee schools – although the grantee/non-grantee difference for teachers was not statistically significant (40.5 percent vs. 20.4 percent, $p>0.05$).

Table 5.7 High School Teacher, Principal, and Coordinator Reports of Prevention/Intervention Curriculum Topics by School TUPE Grantee Status:

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
Tobacco and health	65.1% [38.2, 84.9]	48.7% [26.2, 71.6]	77.2% [52.3, 91.2]	73.5% [51.1, 88.0]	- -	- -
Smoking prevalence	51.7% [17.4, 84.4]	45.2% [23.9, 68.4]	73.8% [51.3, 88.2]	62.1% [43.7, 77.6]	- -	- -
Reasons why people smoke	54.4% [19.4, 85.5]	48.5% [26.7, 71.0]	71.0% [47.3, 87.0]	67.8% [47.2, 83.3]	- -	- -
Social consequences	59.2% [33.6, 80.6]	44.6% [21.0, 67.1]	59.3% [44.5, 72.7]	67.1% [46.7, 82.6]	- -	- -
SHS	65.1% [38.2, 84.9]	50.0% [27.2, 72.3]	71.6% [61.1, 80.1]	68.9% [48.8, 83.7]	- -	- -
Social influences	44.1% [12.9, 80.9]	41.2% [21.3, 64.6]	65.4% [42.2, 83.0]	63.9% [45.4, 79.0]	- -	- -
Behavioral skills	51.7% [17.4, 84.4]	30.7% [15.5, 51.5]	53.1% [37.9, 67.7]	64.0% [45.4, 79.2]	- -	- -
General social skills	54.4% [19.4, 85.5]	21.8% [8.6, 45.4]	66.9% [44.7, 83.5]	56.4% [39.7, 71.8]	- -	- -
Tobacco use cessation	22.2% [4.8, 61.6]	25.3% [11.8, 46.0]	49.0% [33.5, 64.7]	61.9% [43.7, 77.3]	- -	- -
Tobacco advertising	62.7% [35.5, 83.7]	46.3% [24.4, 69.6]	58.7% [43.8, 72.1]	66.0% [46.4, 81.4]	- -	- -
Cigar use	25.7% [6.7, 62.5]	5.0% [1.0, 21.7]	40.1% [24.5, 58.0]	30.8% [19.9, 44.3]	- -	- -

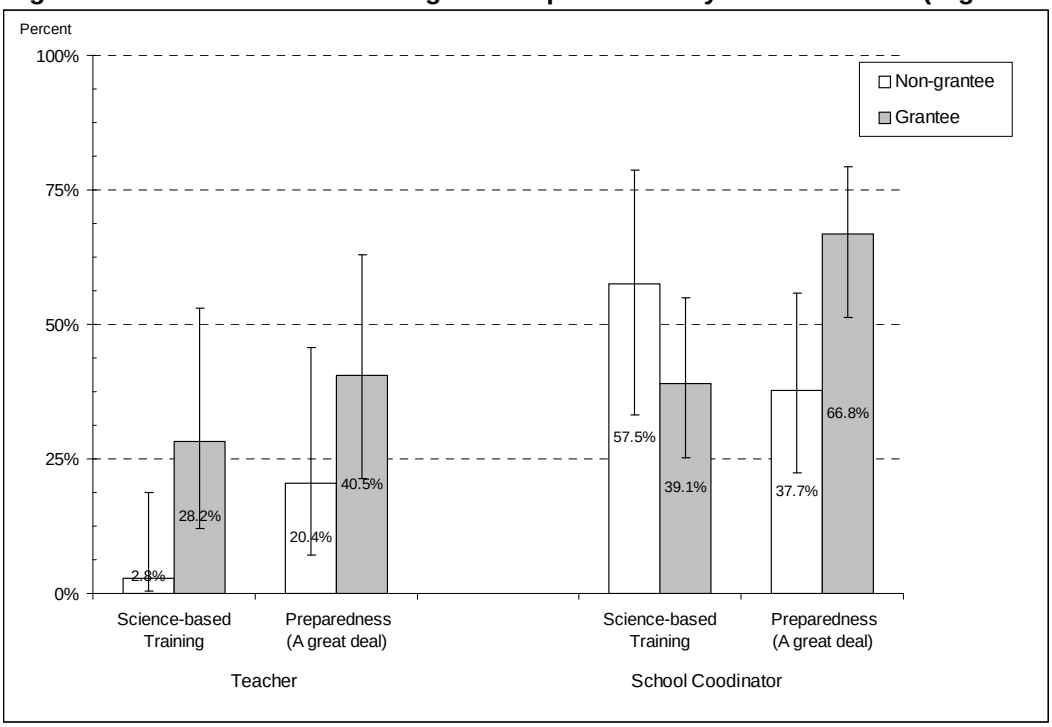
Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Table 5.8 High School Teacher, Principal, and Coordinator Reports of Professional Development/Trainings by TUPE Grantee Status:

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
In-service training	11.2% [2.8, 35.6]	46.4%* [28.8, 64.8]	- -	- -	- -	- -
Developmental asset training	12.7% [3.3, 37.9]	13.8% [4.4, 35.9]	60.0% [42.3, 75.5]	35.8% [21.8, 52.6]	- -	- -
Youth develop. training	8.4% [1.4, 37.7]	20.9% [8.2, 44.1]	48.9% [27.3, 70.9]	24.7% [14.4, 39.0]	- -	- -
Science-based prev. training	2.8% [0.3, 18.8]	28.2%** [12.0, 52.9]	57.5% [33.1, 78.8]	39.1% [25.2, 54.9]	- -	- -
Readiness to quit training	8.4% [1.4, 37.7]	12.7% [3.6, 36.2]	57.3% [32.6, 78.8]	42.2% [26.2, 60.1]	- -	- -
Tobacco use cess. programs	0% [—]	15.5% [4.6, 41.0]	50.5% [27.8, 73.0]	33.0% [17.7, 53.1]	- -	- -
Preparedness (a great deal)	20.4% [7.2, 45.8]	40.5% [21.4, 63.0]	37.7% [22.4, 55.9]	66.8% [51.4, 79.3]	- -	- -

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Figure 5.3 Science-Based Training and Preparedness by Grantee Status (High Schools)



School-wide Anti-tobacco Activities

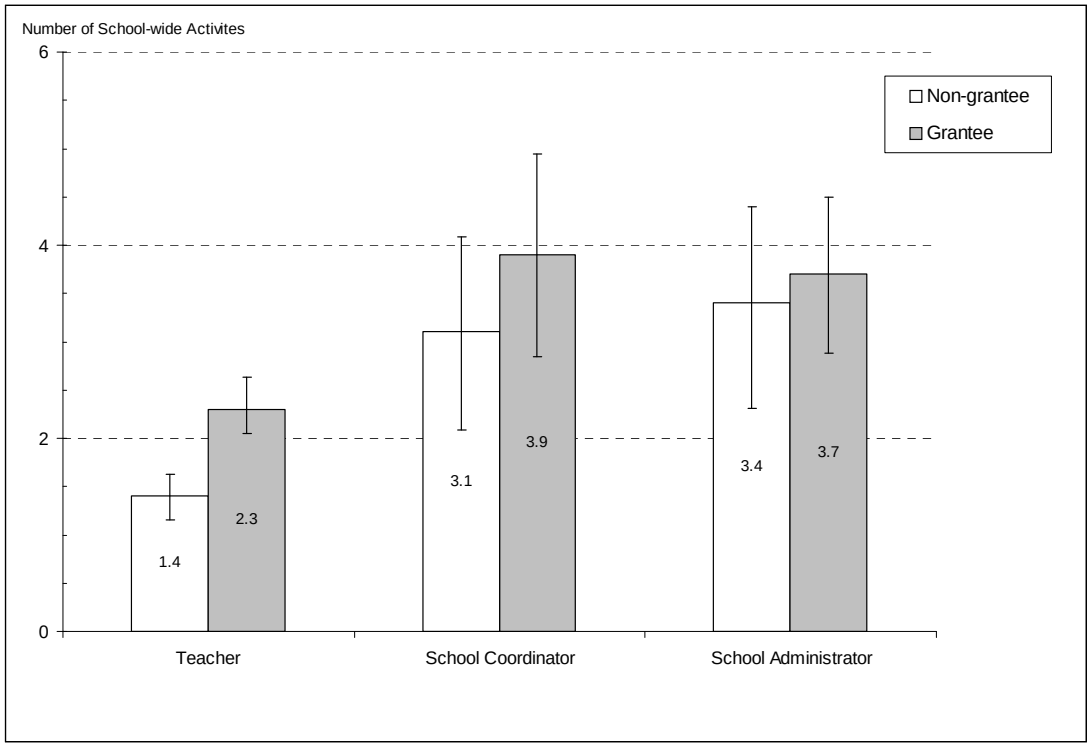
Grantee and non-grantee high schools, but not middle schools, also differed on reports of school-wide anti-tobacco activities (see **Tables 5.5 and 5.9**). According to the high school teacher surveys, grantee schools were more likely than non-grantee schools to sponsor a special day where students and staff were encouraged to refrain from smoking (20.4 percent vs. 6.6 percent, P<0.01), hold an anti-tobacco assembly (19.0 percent vs. 7.1 percent, p<0.01), sponsor an anti-tobacco contest or club (24.1 percent vs. 11.1 percent, p<0.01), and post anti-tobacco posters (41.6 percent vs. 23.3 percent, p<0.01) (see Table 5.9). According to high school teachers, grantee schools provided about one more school-wide tobacco use prevention activity, on average, than non-grantee schools (2.3 vs. 1.4; p<0.01) (**Figure 5.4**). Interestingly, school principals' reports of anti-tobacco activities did not differ substantially across grantee and non-grantee high schools.

Table 5.9 High School Teacher, Principal, and Coordinator Reports of School-Wide Anti-tobacco Activities by TUPE Grantee Status

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
School-Wide Anti-tobacco Activities						
Teens Kick Ash	6.6% [3.5, 12.1]	20.4%** [14.7, 27.6]	28.6% [14.4, 48.9]	34.3% [21.3, 50.1]	36.0% [20.4, 55.3]	29.3% [16.7, 46.1]
Smoke Out	26.4% [16.6, 39.1]	43.7%* [37.5, 50.2]	49.7% [35.6, 63.8]	57.6% [40.4, 73.1]	54.4% [39.8, 68.3]	58.2% [41.9, 72.8]
Assembly	7.1% [3.9, 12.8]	19.0%** [14.6, 24.4]	22.8% [9.6, 45.0]	39.7% [26.6, 54.4]	25.2% [10.9, 48.3]	34.7% [23.6, 47.7]
Contest	11.1% [7.1, 16.8]	24.1%** [18.0, 30.3]	25.4% [12.4, 44.9]	40.1% [26.8, 55.1]	28.5% [14.6, 48.3]	34.0% [22.4, 47.8]
Anti-tobacco club	2.0% [1.0, 4.2]	11.8%** [7.9, 17.3]	19.1% [11.4, 30.2]	27.1% [17.2, 40.0]	14.5% [8.6, 23.4]	24.6% [15.6, 36.6]
Local health department	3.7% [1.6, 8.0]	6.0% [3.5, 10.2]	5.9% [2.2, 14.9]	28.0%** [17.0, 42.3]	18.1% [6.0, 43.4]	28.4% [16.6, 44.1]
Anti-tobacco posters	23.3% [16.4, 32.1]	41.6%** [33.2, 50.4]	53.6% [39.4, 67.3]	60.4% [41.4, 76.7]	60.8% [39.8, 78.5]	65.8% [48.1, 80.0]
Red Ribbon Week	55.7% [46.2, 64.8]	60.4% [54.4, 66.1]	69.3% [59.3, 77.7]	72.1% [50.8, 86.6]	75.2% [51.7, 89.6]	78.3% [57.0, 90.8]
Number of activities	1.4 [1.2, 1.6]	2.3** [2.1, 2.6]	3.1 [2.1, 4.1]	3.9 [2.8,4.9]	3.4 [2.3, 4.4]	3.7 [2.9, 4.5]
Tobacco Use Cessation Activities						
Tobacco use cess. programs	10.8% [7.4, 15.5]	24.4%** [17.7, 32.7]	28.6% [14.2, 49.1]	58.6%** [41.4, 73.9]	31.8% [17.7, 50.3]	62.4%** [45.8, 76.6]
Referral to tobacco use cess.	2.9% [1.3, 6.4]	5.1% [2.5, 10.1]	32.3% [18.0, 50.9]	54.4%** [37.7, 70.3]	- -	- -

Note: Brackets contain the 95 percent confidence intervals.
* $0.01 < p < 0.05$
** $p < 0.01$

Figure 5.4 Number of School-Wide Anti-Tobacco Activities by Grantee Status (High Schools)



Tobacco Use Cessation Activities

Figure 5.5 shows grantee/non-grantee differences in reports of the presence of tobacco use cessation programs for high school students. The figure shows that grantee schools were about twice as likely to have a tobacco use cessation program for students compared to non-grantee schools, regardless of who was providing the report (e.g., 58.6 percent for coordinators at grantee schools vs. 28.6 percent at non-grantee schools, $p<0.01$) (see Table 5.9). Overall, teachers were less than half as likely to be aware of such services compared to school coordinators, school administrators, and district coordinators. This pattern was not apparent for middle schools.

Student Exposure to Prevention/Intervention Services in TUPE-Grantee and Non-Grantee High Schools

Consistent with the paucity of differences in teacher/coordinator/principal reports, there were few differences in student reports regarding the consequences of violations of tobacco-free school policies described in **Table 5.10**. Grantee middle school students, however, did report a lower likelihood of receiving a ticket for violating the school's tobacco free policy compared to students in non-grantee middle schools. Consistent with coordinator/principal reports of greater referral to tobacco use cessation services in grantee schools, grantee high school students also reported a higher likelihood of referral to peer counseling services or to a special class for violating the school's tobacco free policy compared to non-grantee high school students.

Figure 5.5 School Tobacco Use Cessation Program by Grantee Status (High Schools)

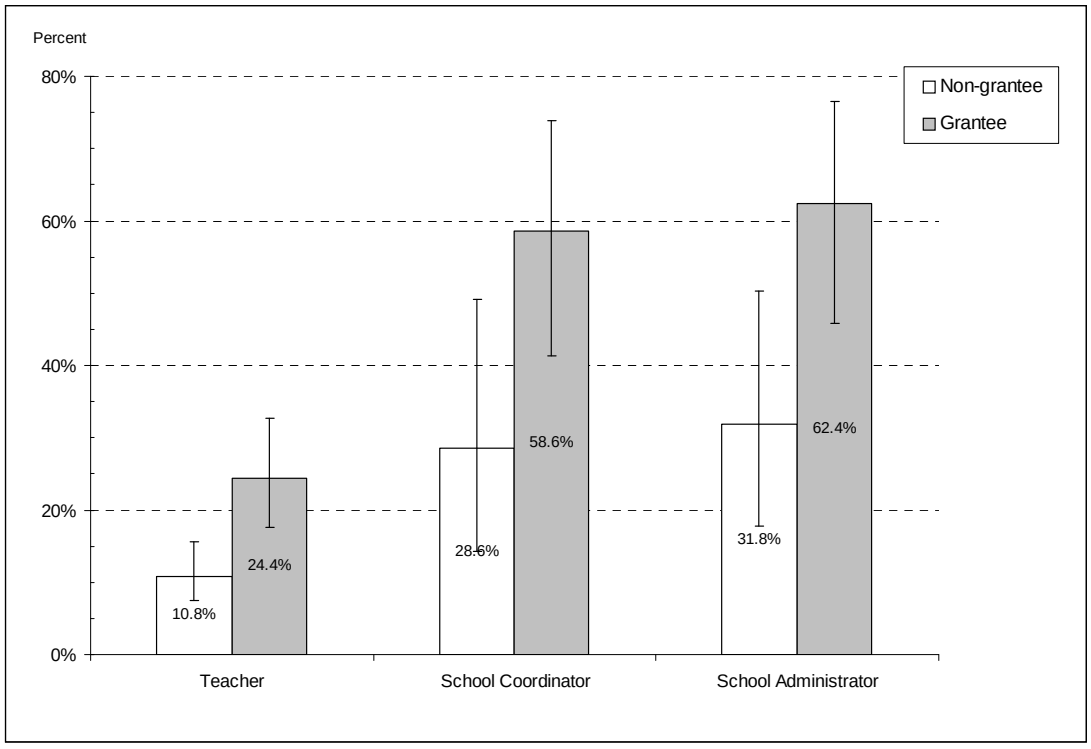


Table 5.10 Student Reports of No-Tobacco-Use-on-Campus Policies by Competitive Grantee Status

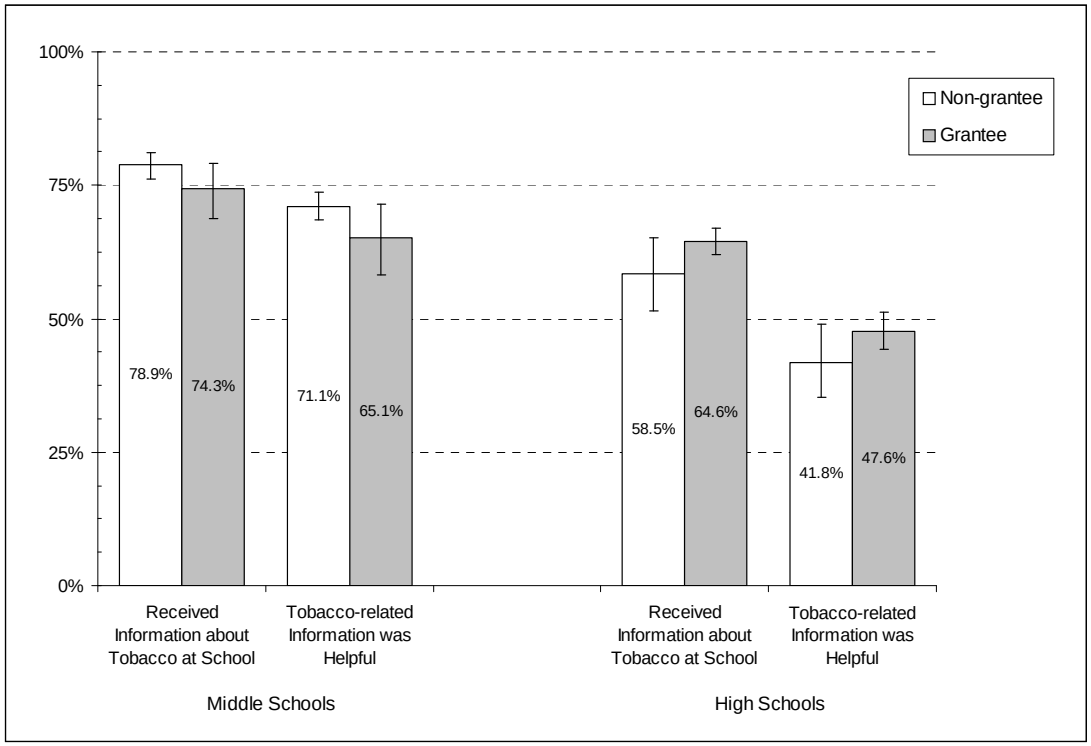
	Non-grantee	Grantee	p-value
Middle Schools			
Presence of No-Tobacco-Use-on-Campus Policy (Yes)	87.9% [86.5, 89.3]	90.6% [85.8, 93.9]	0.25
Consequences of Violation of No-Tobacco-Use-on-Campus Policy			
Suspension	42.4% [38.1, 46.7]	36.7% [24.5, 50.9]	0.43
Ticket	14.5% [11.47, 18.16]	8.0% [5.2, 11.9]	0.01
Referred to Special Class	8.1% [6.7, 9.8]	7.0% [4.7, 10.4]	0.51
Referred to Adult Counselor	14.3% [12.0, 17.0]	12.6% [8.1, 18.9]	0.57
Referred to Peer Counselor	5.4% [4.0, 7.1]	3.5% [2.1, 5.9]	0.15
Parent Conference	23.9% [21.0, 27.0]	21.3% [11.4, 32.1]	0.61
High Schools			
Presence of No-Tobacco-Use-on-Campus Policy (Yes)	92.6% [91.2, 93.7]	92.8% [91.8, 93.7]	0.78
Consequences of Violation of No-Tobacco-Use-on-Campus Policy			
Suspension	46.3% [43.7, 48.8]	45.8% [42.4, 49.2]	0.77
Ticket	17.3% [13.7, 21.7]	17.0% [14.0, 20.4]	0.91
Referred to Special Class	7.8% [6.5, 9.2]	9.8% [8.4, 11.4]	0.03
Referred to Adult Counselor	13.9% [12.6, 15.2]	14.4% [12.5, 16.6]	0.58
Referred to Peer Counselor	5.6% [5.1, 6.3]	8.1% [6.2, 10.5]	0.01
Parent Conference	25.1% [22.9, 27.5]	25.2% [22.2, 28.5]	0.96

Note: Brackets contain the 95 percent confidence intervals.

Figures 5.6-5.9 and **Tables 5.11-5.12** show differences in student reports of exposure to program services between middle and high schools with TUPE competitive grants and schools without such grants. The student measures of exposure to program services are described in more detail in Chapter 3. Overall, the results indicated that students in grantee middle schools were more likely to report slightly lower levels of exposure to program services than students in non-grantee schools – although only one measure of this difference was statistically significant. In high schools, students in grantee schools were more likely to report higher levels of exposure to TUPE services than their counterparts in non-grantee schools. However, most of these differences in high schools were not statistically significant, which may underscore the fact that the state TUPE competitive program is not the only source of resources for public school-based tobacco use prevention activities. No attempt was made in this study to quantify the impact of other resources such as tobacco use prevention and tobacco use cessation materials from ACS, ALA, AHA or other federally-funded prevention programs.

Figure 5.6 shows that fewer grantee middle school students compared to students in non-grantee middle schools reported that they received information about tobacco use at school during the 12 months prior to the survey (74.3 percent vs. 78.9 percent respectively). High school students were less likely to receive information about tobacco use than middle school students, but those in grantee high schools reported higher levels of exposure to information (64.6 percent vs. 58.5 percent). Students in non-grantee middle schools reported higher levels of helpfulness compared to students in grantee schools (71.1 percent vs. 65.1 percent). Students in grantee high schools were more likely than those in non-grantee high schools to report that the information was helpful (47.6 percent vs. 41.8 percent). In no case, however, were these grantee/non-grantee differences statistically significant.

Figure 5.6 Access to Tobacco-Related Information at School by Grantee Status



Figures 5.7 and 5.8 show student exposure to tobacco lessons and tobacco-related topics by TUPE grantee status for middle school and high school students, respectively. Once again, students in non-grantee middle schools reported higher levels of exposure to tobacco lessons than their counterparts in grantee schools. By contrast, among high schools, exposure to tobacco lessons was higher among grantee schools (45.6 percent vs. 38.8 percent). In middle schools, approximately 59 percent and 64 percent of students in grantee and non-grantee schools (respectively) reported receiving school lessons about tobacco use prevention/cessation. In high schools, approximately 46 percent and 39 percent of students in grantee and non-grantee schools (respectively) reported receiving tobacco lessons. In neither middle nor high schools, however, were these differences statistically significant.

Figures 5.7 and 5.8 also show grantee/non-grantee differences in students' exposure to specific tobacco topics. The most common topics covered were refusal skills, the physical consequences of tobacco use, and the reasons why people smoke. The least common topic covered was smoking prevalence. For most topics the differences between grantee and non-grantee schools were not statistically significant. One exception was that more students in non-grantee middle schools (50.9 percent) reported receiving a lesson on SHS compared to students in grantee middle schools (43.6 percent).

Figure 5.7 Exposure to Tobacco Lessons by Grantee Status (Middle Schools)

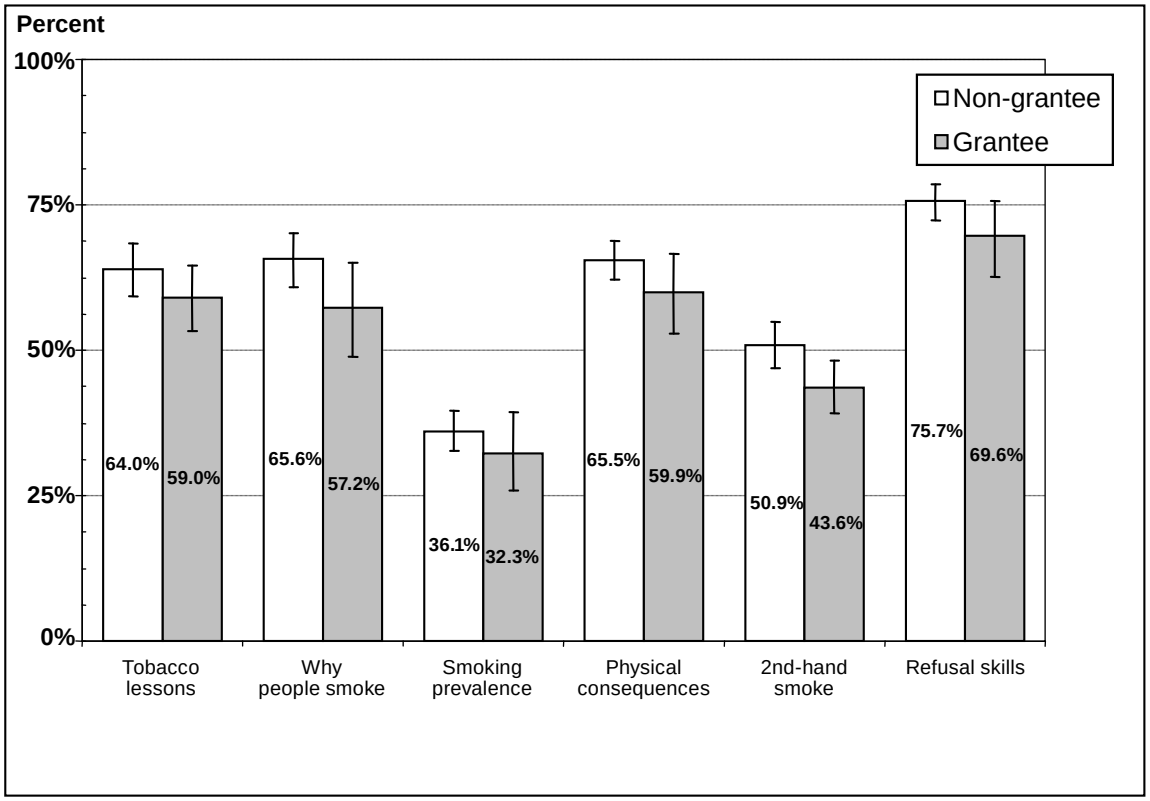


Figure 5.8 Exposure to Tobacco Lessons by Grantee Status (High Schools)

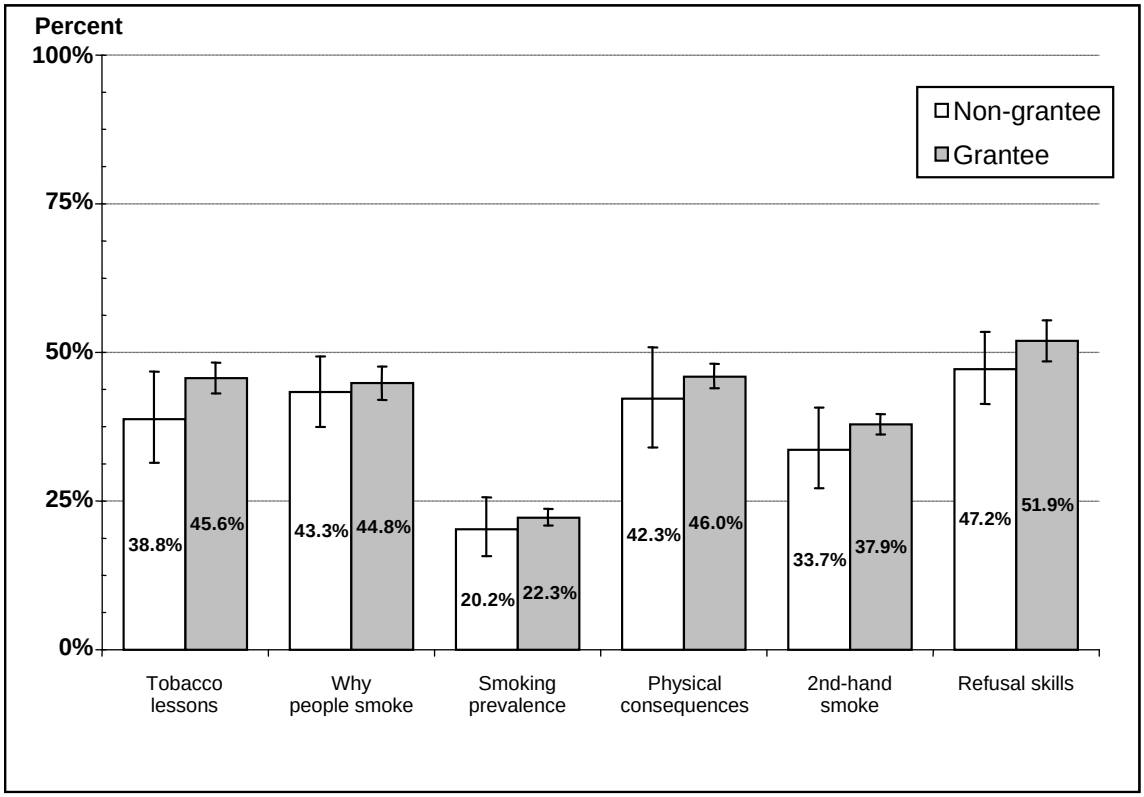


Table 5.11 Student Reports of Exposure to Prevention/Intervention Services by Middle School Competitive Grantee Status

	Non-grantee	Grantee	p-value
Received information about tobacco	78.9% [76.2, 81.2]	74.3% [68.7, 79.2]	0.12
Tobacco information helpful	71.1% [68.5, 73.7]	65.1% [58.2, 71.4]	0.09
Tobacco lessons	64.0% [59.2, 68.4]	59.0% [53.3, 64.6]	0.19
Guest speaker	59.9% [55.6, 64.0]	57.4% [49.5, 65.0]	0.59
Assembly about tobacco use	53.6% [46.7, 60.3]	46.3% [36.2, 56.7]	0.25
Taught about why people smoke	65.6% [60.9, 70.1]	57.2% [48.9, 65.0]	0.07
Taught about smoking prevalence	36.1% [32.8, 39.6]	32.3% [25.9, 39.5]	0.62
Taught about physical harm from smoking	65.5% [62.1, 68.8]	59.9% [52.9, 66.5]	0.14
Taught about SHS	50.9% [47.0, 54.9]	43.6% [39.3, 48.1]	0.02
Smoking Decision-making skills	71.1% [68.5, 73.7]	65.1% [58.2, 71.4]	0.09
Refusal skills training	75.7% [72.4, 78.6]	69.6% [62.7, 75.7]	0.09
Tobacco use cessation training	52.9% [50.4, 55.3]	48.3% [42.0, 54.8]	0.19
Tobacco use cessation classes	13.9% [9.3, 20.2]	10.1% [6.9, 14.5]	0.23

Note: Brackets contain the 95 percent confidence intervals.

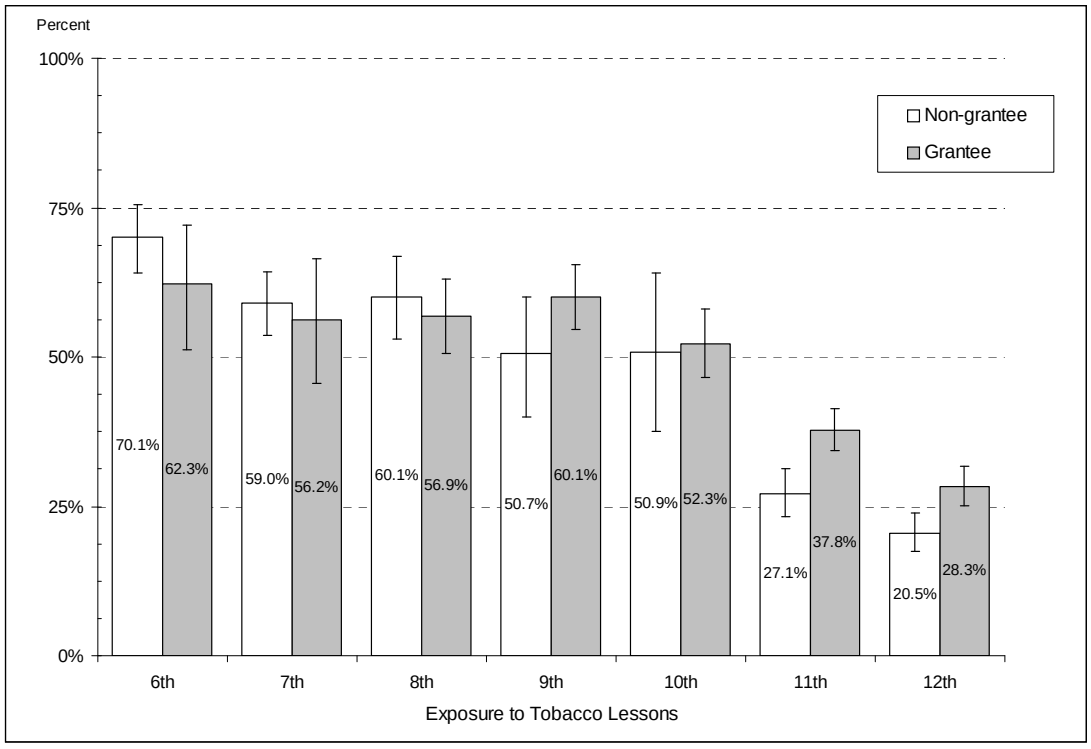
Table 5.12 Student Reports of Exposure to Prevention/Intervention Services by High School Competitive Grantee Status

	Non-grantee	Grantee	p-value
Received information about tobacco	58.5% [51.5, 65.2]	64.6% [62.1, 67.1]	0.10
Tobacco information helpful	41.8% [35.4, 48.5]	47.6% [44.1, 51.1]	0.16
Tobacco lessons	38.8% [31.5, 46.7]	45.6% [43.0, 48.2]	0.12
Guest speaker	36.9% [29.6, 44.7]	42.2% [38.9, 45.6]	0.23
Assembly about tobacco use	27.9% [22.5, 34.0]	30.3% [26.8, 33.9]	0.51
Taught about why people smoke	43.3% [37.5, 49.4]	44.8% [42.1, 47.5]	0.67
Taught about smoking prevalence	20.2% [15.7, 25.7]	22.3% [21.0, 23.7]	0.44
Taught about physical harm from smoking	42.3% [34.1, 50.9]	46.0% [44.0, 48.0]	0.42
Taught about SHS	33.7% [27.2, 40.8]	37.9% [36.2, 39.6]	0.25
Smoking Decision-making skills	41.8% [35.4, 48.5]	47.6% [44.1, 51.1]	0.16
Refusal skills training	47.2% [41.1, 53.4]	51.9% [48.4, 55.3]	0.23
Tobacco use cessation training	50.4% [48.5, 52.4]	58.1% [55.0, 61.2]	<0.01**
Tobacco use cessation classes	16.8% [12.1, 23.0]	31.5% [25.4, 38.5]	<0.01**

Note: Brackets contain the 95 percent confidence intervals.
** p< 0.01

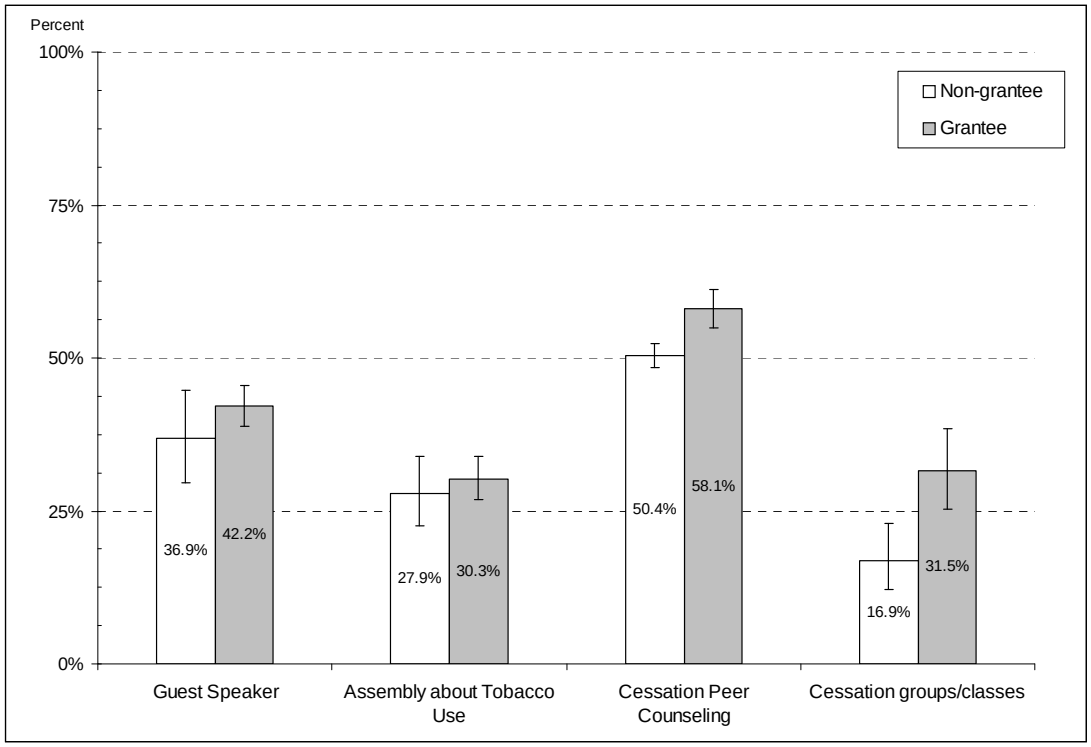
As discussed in Chapter 3, secondary students were less likely to attend courses that covered tobacco use prevention-related material as they advanced to higher grades. This pattern was evident in both grantee and non-grantee schools. As shown in **Figure 5.9**, however, juniors and seniors in grantee schools reported substantially higher rates of exposure to TUPE lessons (37.8 percent and 28.3 percent respectively) than their counterparts in non-grantee schools (27.1 percent and 20.5 percent respectively). Thus, it appears that students in grantee schools were more likely to be exposed to TUPE-related curricula throughout their high school years.

Figure 5.9 Exposure to Tobacco Lessons by Grade and Grantee Status



As shown in **Figure 5.10**, students in grantee high schools reported that their schools provided more tobacco use cessation services compared to students in non-grantee schools. Grantee/non-grantee differences regarding guest speakers and tobacco use assemblies, however, were not statistically significant. The most pronounced difference between grantee and non-grantee schools was in the presence of tobacco use cessation groups/classes. Almost one-third of students (31.5 percent) in grantee schools reported that their school had special groups or classes for students who wanted to quit smoking, compared to 16.8 percent among students in non-grantee schools (see Table 5.12). TUPE funding in high schools appears to make it more achievable for high schools to provide tobacco use cessation services. This pattern was not apparent in middle schools.

Figure 5.10 School-Wide Tobacco Events and Tobacco Use Cessation Activities (Student Reports) by Grantee Status (High Schools)



The relationship between the length of time that each high school had a competitive grant and student reports of exposure to program services was also examined. Schools with TUPE grants were divided into three groups – those who had a grant for less than three years, those who had grants for more than three years but less than six years, and those who had a grant for six years or more. A period of three years was considered minimally necessary for schools to fully realize the benefits of developing and implementing a school-based TUPE program. Student reports were compared across these three groups of grantee schools.[1] These comparisons are presented in **Table 5.13**. Overall, the results suggested that TUPE grant duration was not significantly related to any of the student measures of tobacco use prevention services.

[1] Teacher's and school coordinator's reports of program implementation were also compared across these three groups of grantee schools. Although the limited sample size reduced the ability to detect differences, in no case was there evidence that TUPE grant duration was related to teacher or coordinator reports of program implementation.

Table 5.13 Student Reports of Exposure to Prevention/Intervention Services by Duration of High School Competitive Grant

	0-3 Years	3-6 Years	6+ Years	p-value
Received information about tobacco	65.9% [57.2, 73.7]	65.3% [58.8, 71.3]	64.0% [61.0, 66.9]	0.84
Tobacco information helpful	47.0% [38.7, 55.4]	48.7% [42.8, 54.6]	47.6% [42.8, 52.5]	0.94
Tobacco lessons	46.1% [37.1, 55.3]	47.5% [41.4, 53.8]	45.0% [41.6, 48.4]	0.82
Guest speaker	44.8% [31.9, 58.4]	43.3% [38.4, 48.3]	41.0% [37.8, 44.3]	0.66
Assembly about tobacco use	28.4% [21.7, 36.2]	34.9% [25.8, 45.1]	29.8% [24.9, 35.3]	0.54
Taught about why people smoke	43.5% [36.7, 50.5]	45.6% [39.3, 52.1]	45.1% [41.7, 48.5]	0.87
Taught about smoking prevalence	22.4% [18.7, 26.5]	25.6% [20.5, 31.4]	21.5% [19.7, 23.3]	0.31
Taught about physical harm from smoking	45.5% [39.6, 51.6]	47.1% [42.0, 52.3]	45.9% [43.1, 48.7]	0.91
Taught about SHS	37.0% [31.3, 43.0]	38.9% [32.8, 45.4]	38.0% [35.9, 40.1]	0.89
Smoking Decision-making skills	47.0% [38.7, 55.4]	48.7% [42.8, 54.6]	47.6% [42.8, 52.5]	0.94
Refusal skills training	48.5% [41.0, 56.0]	53.8% [47.1, 60.5]	52.7% [48.2, 57.1]	0.49
Tobacco use cessation training	56.4% [52.9, 59.9]	52.0% [47.9, 56.2]	60.2% [56.3, 64.0]	0.45
Tobacco use cessation classes	33.6% [21.5, 48.3]	23.3% [14.0, 36.2]	32.7% [23.8, 43.0]	0.50

Note: Brackets contain the 95 percent confidence intervals.

Student Tobacco Use and Tobacco Use Precursors in TUPE-Grantee and Non-Grantee High Schools

With the exception of tobacco use cessation services, the results presented above indicate that students in grantee schools reported similar levels of exposure to program services compared to students in non-grantee schools. Because there were few apparent differences in program exposure, there were likely to be few grantee/non-grantee differences in tobacco use among students. According to the results in **Figures 5.11** and **5.12** and in **Table 5.14**, lifetime tobacco use, current cigarette use, daily cigarette use, and lifetime regular cigarette use was no different in grantee and non-grantee schools. Although the lack of association between TUPE participation and student smoking behavior was consistent with the inference that the competitive TUPE program was not effective in reducing tobacco use, other inferences are also plausible. For example, it is equally plausible that grantee schools had a greater need for services prior to receiving an award, and thus higher tobacco use rates. The finding that tobacco use rates were no different in grantee compared to non-grantee schools at the time of the survey would then suggest that grantee schools had made progress in reducing

tobacco use, bringing their previously high rates down to the same level as the rates of non-TUPE-funded schools. With cross-sectional data such as this, it is impossible to make strong inferences about the effectiveness of the competitive TUPE program. Repeated assessment of the same schools over time would help to distinguish these alternative explanations for why there were few significant differences in student tobacco use by TUPE funding status.

Figure 5.11 Student Tobacco Use by TUPE Grantee Status (Middle Schools)

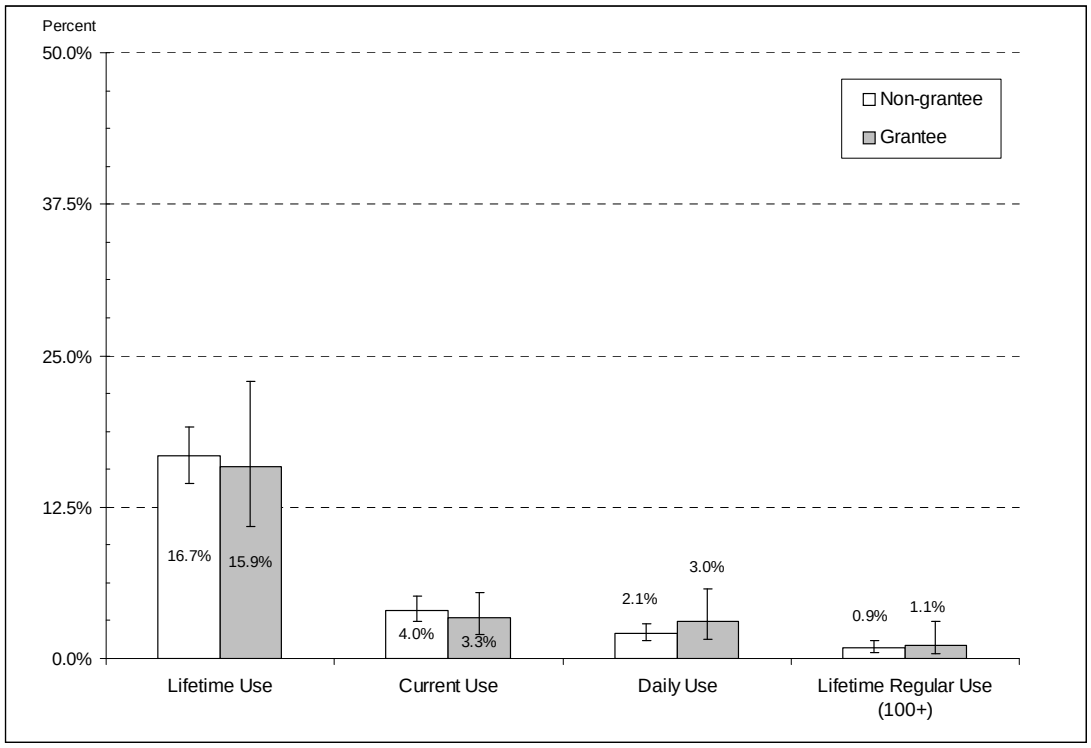


Figure 5.12 Student Tobacco Use by TUPE Grantee Status (High Schools)

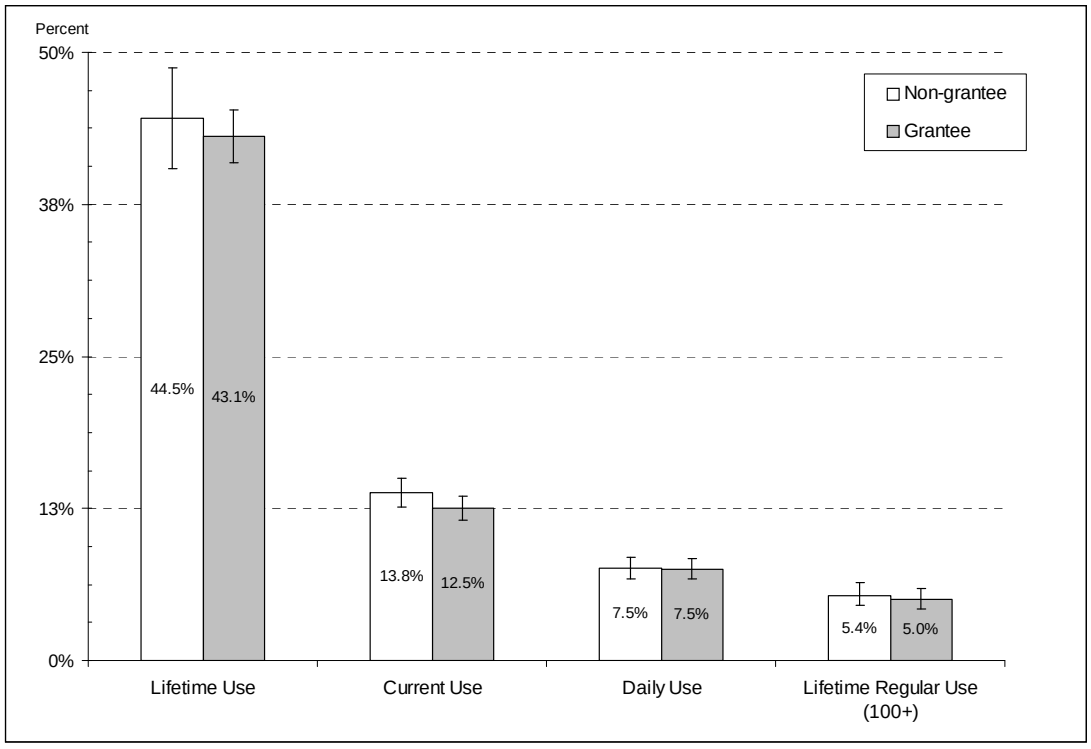


Table 5.14 Student Smoking Behavior by School Competitive Grantee Status

	Non-grantee	Grantee	p-value
Middle Schools			
Lifetime cigarette use	16.7% [14.5, 19.2]	16.0% [10.9, 22.8]	0.82
Current cigarette use	4.0% [3.1, 5.2]	3.3% [2.0, 5.4]	0.51
Daily cigarette use	2.1% [1.5, 2.9]	3.0% [1.6, 5.8]	0.30
Lifetime 100+ cigarette use	0.9% [0.5, 1.5]	1.1% [0.4, 3.0]	0.74
High Schools			
Lifetime cigarette use	44.5% [40.4, 48.8]	43.1% [40.9, 45.3]	0.53
Current cigarette use	13.8% [12.6, 15.0]	12.5% [11.5, 13.5]	0.11
Daily cigarette use	7.5% [6.7, 8.4]	7.5% [6.7, 8.4]	0.97
Lifetime 100+ cigarette use	5.4% [4.5, 6.4]	5.0% [4.2, 5.9]	0.56

Note: Brackets contain the 95 percent confidence intervals.

Figures 5.13-5.16 and **Table 5.15** show grantee/non-grantee differences in tobacco use precursors – factors known to be associated with reductions in future tobacco use. For the majority of the tobacco use precursors considered, students in grantee and non-grantee schools reported similar values. Intentions to smoke in the future, ease of tobacco refusal, peer cigarette use, accuracy of smoking norms, and anti-smoking social perceptions were not statistically different among students in grantee and non-grantee schools. In high schools, however, students in grantee schools endorsed anti-tobacco industry beliefs more strongly (3.51 percent vs. 3.45 percent, p value=0.01) and had greater knowledge about the deleterious consequences of tobacco use (75.0 percent vs. 73.0 percent, p value =0.02) compared to their counterparts in non-grantee schools.

Figure 5.13 Student Tobacco Use Precursors by TUPE Grantee Status (Middle Schools)

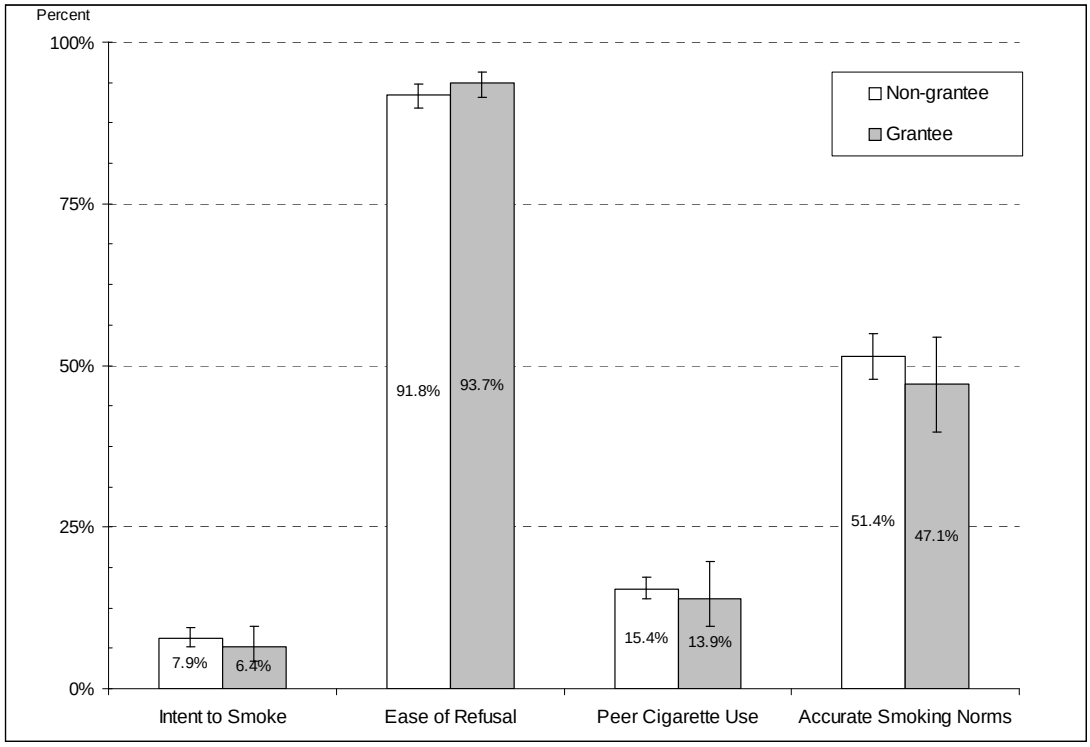


Figure 5.14 Student Tobacco Use Precursors by TUPE Grantee Status (High School)

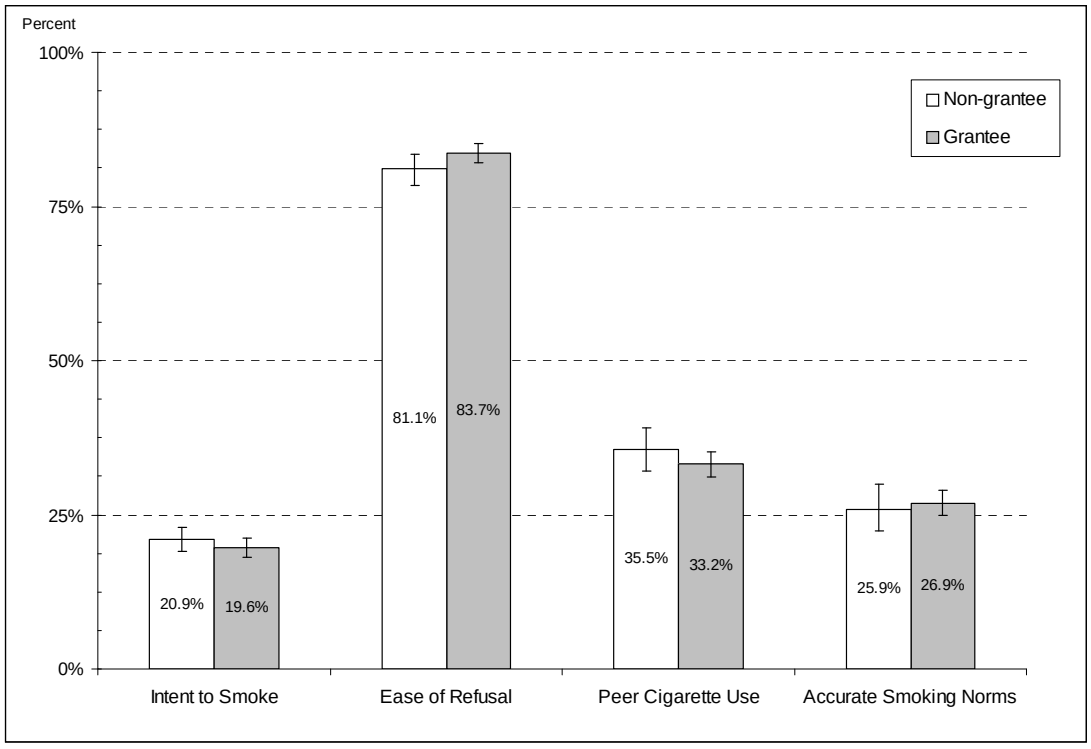


Figure 5.15 Anti-Smoking Perceptions by TUPE Grantee Status

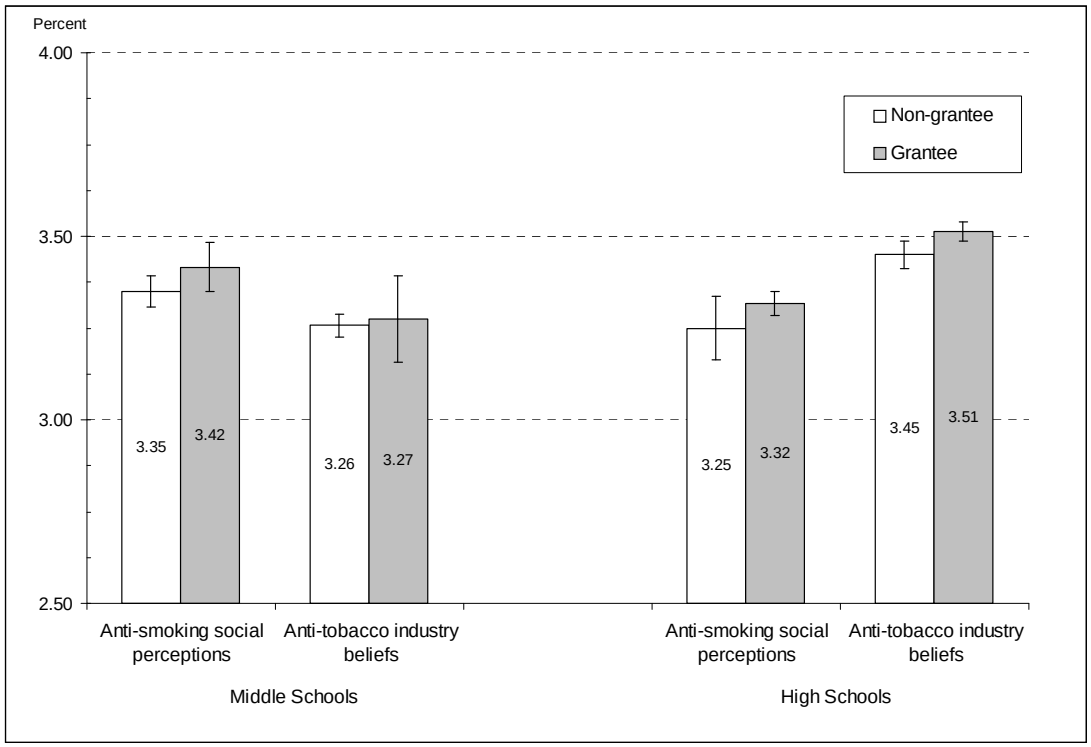


Figure 5.16 Tobacco Knowledge by TUPE Grantee Status (High Schools)

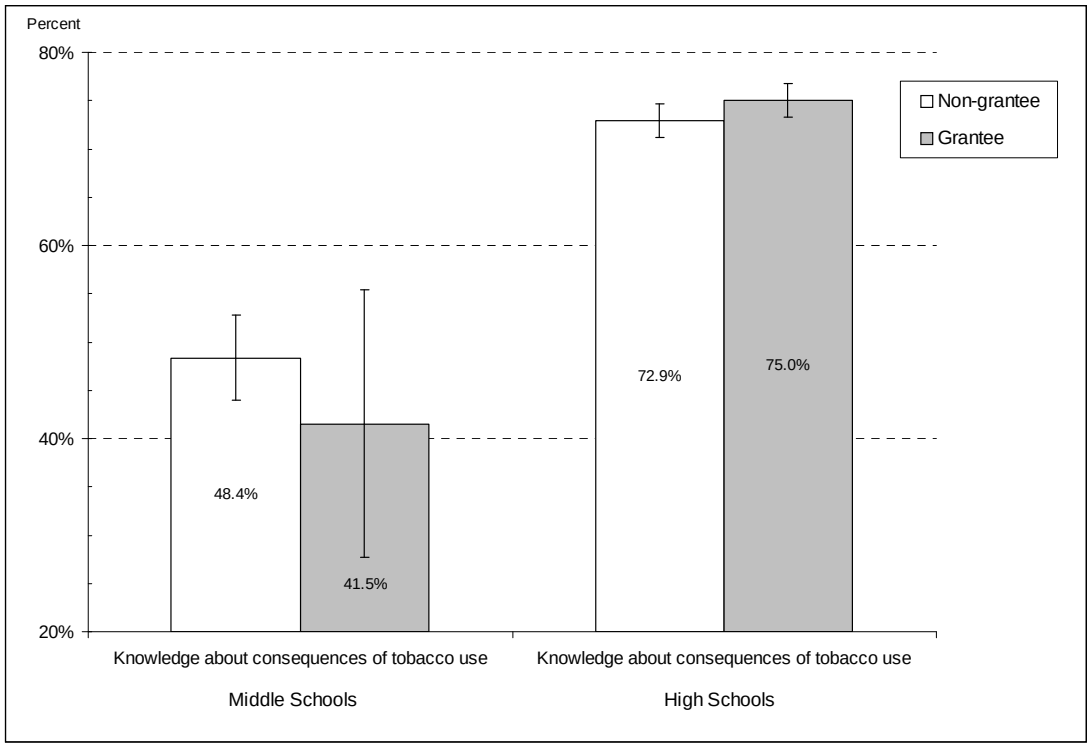


Table 5.15 Student Precursors to Smoking by School Competitive Grantee Status

	Non-grantee	Grantee	p-value
Middle Schools			
Intent to smoke	7.9% [6.5, 9.5]	6.5% [4.3, 9.6]	0.37
Ease of cigarette refusal	91.8% [89.8, 93.5]	93.7% [91.5, 95.4]	0.17
Peer cigarette use	15.4% [13.8, 17.2]	13.9% [9.6, 19.7]	0.58
Accurate smoking norms	51.4% [47.8, 55.0]	47.1% [39.8, 54.5]	0.31
Anti-smoking social perceptions	3.35% [3.3, 3.4]	3.42% [3.3, 3.5]	0.11
Knowledge about consequences of tobacco use	48.4% [44.0, 52.8]	41.5% [27.7, 55.4]	0.35
Anti-tobacco industry beliefs	3.26% [3.2, 3.3]	3.27% [3.2, 3.4]	0.79
High Schools			
Intent to smoke	20.9% [19.1, 22.9]	19.6% [18.2, 21.1]	0.34
Ease of cigarette refusal	81.1% [78.4, 83.5]	83.7% [82.0, 85.2]	0.09
Peer cigarette use	35.5% [32.0, 39.2]	33.2% [31.2, 35.2]	0.24
Accurate smoking norms	25.9% [22.3, 29.9]	26.9% [24.8, 29.0]	0.67
Anti-smoking social perceptions	3.25% [3.2, 3.3]	3.32% [3.3, 3.3]	0.21
Knowledge about consequences of tobacco use	72.9% [71.2, 74.6]	75.0% [73.3, 76.8]	0.02
Anti-tobacco industry beliefs	3.45% [3.4, 3.5]	3.51% [3.5, 3.5]	0.01

Note: Brackets contain the 95 percent confidence intervals.

As discussed at the beginning of this chapter, grantee schools differed from non-grantee schools in terms of their demographic composition, which may have masked differences between grantee schools and non-grantee schools attributable to TUPE. To account for this potential confound, regression techniques were used to examine differences in student tobacco use and tobacco use precursors across grantee and non-grantee schools. These regression models controlled for ethnic composition, the percentage of students receiving subsidized meals, and parental education. The results based on these models were substantively identical to those discussed above. Differences between grantee and non-grantee schools in student ethnic and socio-economic composition did not mask differences in student tobacco use or tobacco use precursors.

The analysis also examined how tobacco use and tobacco use precursors varied across grantee high schools by duration of funding. If schools become more effective at preventing and reducing tobacco use with increasing experience, then grantees that had been funded for a longer period of time should exhibit lower levels of tobacco use and lower levels of precursors to tobacco use than more recent grantees. **Tables 5.16** and **5.17** show how tobacco use prevalence and tobacco use precursors were related to the duration of TUPE competitive grant funding. The results suggest that grant duration was not significantly related to any of the student measures of tobacco use or its precursors.

Table 5.16 Student Smoking Behavior by Duration of High School TUPE Competitive Grant

	0-3 Years	3-6 Years	6+ Years	p-value
Lifetime cigarette use	44.6% [40.3, 49.0]	44.6% [38.8, 50.5]	42.2% [39.4, 45.0]	0.56
Current cigarette use	13.3% [11.3, 15.6]	13.1% [11.0, 15.7]	12.1% [10.9, 13.3]	0.49
Daily cigarette use	7.7% [5.8, 10.3]	9.2% [7.6, 11.2]	7.0% [6.2, 8.0]	0.20
Lifetime 100+ cigarette use	5.1% [3.9, 6.5]	6.9% [5.3, 9.0]	4.5% [3.6, 5.6]	0.04

Note: Brackets contain the 95 percent confidence intervals.

Table 5.17 Student Precursors to Smoking by Duration of High School TUPE Competitive Grant

	0-3 Years	3-6 Years	6+ Years	p-value
Intent to smoke	21.5% [18.5, 24.9]	18.8% [16.1, 21.8]	19.1% [17.3, 21.1]	0.32
Ease of cigarette refusal	84.2% [79.4, 88.1]	83.9% [81.2, 86.3]	83.4% [81.5, 85.2]	0.87
Peer cigarette use	33.1% [30.2, 36.1]	36.1% [33.0, 39.4]	32.5% [29.9, 35.2]	0.24
Accurate smoking norms	28.8% [22.9, 35.5]	24.8% [21.9, 27.9]	26.7% [24.7, 28.7]	0.46
Anti-smoking social perceptions	3.30% [3.3, 3.4]	3.35% [3.3, 3.4]	3.31% [3.3, 3.4]	0.40
Knowledge about consequences of tobacco use	76.5% [69.6, 83.4]	74.9% [72.9, 77.0]	74.5% [72.3, 76.8]	0.82
Anti-tobacco industry beliefs	3.49% [3.4, 3.5]	3.52% [3.5, 3.6]	3.52% [3.5, 3.6]	0.70

Note: Brackets contain the 95 percent confidence intervals.

Conclusion

Our analyses of teacher, school coordinator, school administrator, and district coordinator reports of program implementation indicated that high schools with competitive TUPE grants were more likely than other schools to offer tobacco use cessation services to students, to sponsor school-wide anti-tobacco activities, and to provide science-based tobacco use prevention instruction training to teachers and school coordinators. However, little evidence supported the idea that health and science teachers in grantee high schools thought about tobacco use prevention more frequently or that teachers and coordinators covered different topics compared to their counterparts in schools without competitive TUPE grants. Also there was no evidence of differences in program implementation across grantee and non-grantee middle schools.

The majority of secondary school students in California recalled receiving information about tobacco use at school, and of those who did receive information, many found the information helpful in making decisions about tobacco use. Students who attended schools with competitive TUPE grants were equally likely to recall being exposed to tobacco use prevention services compared to other students. This underscores the fact that the state TUPE competitive program was not the only source of resources for school-based tobacco use prevention activities.[2] Even high schools that did not have competitive TUPE grants were able to provide TUPE to their students.

The most significant difference between grantee and non-grantee schools was the presence of tobacco use cessation classes. Almost one third of students in grantee schools indicated that their school had a special program for students who wanted to quit smoking, compared to sixteen percent among students in non-grantee schools. Services for tobacco use cessation appeared to be a common component funded by the high school competitive TUPE program. There appeared to be no TUPE curriculum differences, however, to parallel the observed differences in tobacco use cessation services between TUPE grantee and non-grantee schools.

TUPE competitive grant duration was not significantly related to student exposure to tobacco use prevention services. Also, student tobacco use was no different in grantee compared to non-grantee high schools. These results are consistent with those reported in the previous In-School Evaluation or in its predecessor, the Independent Evaluation Report. There was some evidence, however, that two precursors to future tobacco use (anti-tobacco industry beliefs and knowledge about the adverse consequences of cigarette use) were higher among high school students in grantee schools.

[2] Some non-TUPE-funded schools had resources for supporting a TUPE-type curriculum. Given that many schools used their Safe and Drug-Free Schools resources to discourage tobacco use, this is a parsimonious explanation for the lack of curriculum differences observed between TUPE-funded and non-TUPE-funded schools to believe that students in non-TUPE-funded schools received exposure to some kind of TUPE-type curriculum.

References

Bruvold, W. H. A meta-analysis of adolescent smoking prevention programs. 1993. *American Journal of Public Health, 83,* 872-880.

Segerstrom, S. C., W. J. McCarthy, N. H. Caskey, T. M. Gross, and M. E. Jarvik. 1993. Optimistic bias among cigarette smokers. *Journal of Applied Social Psychology, 23,* 1606-1618.

CHAPTER 6

KNOWLEDGE OF TUPE PROGRAM IMPLEMENTATION

CHAPTER 6: KNOWLEDGE OF TUPE PROGRAM IMPLEMENTATION

CHAPTER HIGHLIGHTS

- **Reports of TUPE program implementation were not consistent across school-level and district-level staff, in part because district coordinators possessed a perspective that included all schools while staff at sampled schools had perspectives potentially unique to their school.**
- **District staff tended to report higher frequency of implementation of various federal guidelines (e.g., instruction on various effects of tobacco use, not just physical consequences; using developmentally appropriate, science-based published curricula; involving parents and families) compared to school staff.**
- **Staff across all levels reported the presence and enforcement of a tobacco-control policy in their respective school, but there was lack of agreement on the consequences for violation of this policy, indicating that such policies may need to be clearly and consistently defined and communicated throughout the school.**
- **Qualitative data gathered from site visits to a subset of schools indicated that staff were attempting to include multiple approaches to tobacco use prevention (such as social causes and consequences of tobacco use in addition to health effects) even if they were not using a specific, published curriculum.**
- **However, site visits also revealed that site coordinators often felt unprepared to teach about tobacco and revealed that significant barriers existed for engaging in professional development and implementing TUPE training among teachers already overburdened with high-pressure demands regarding meeting state education standards and boosting their students' academic achievement.**

Introduction

The overall purpose of collecting data from adults at the school sites and district offices was to assess the extent to which teachers and administrators were knowledgeable about and actively involved with the TUPE program in their school or district. Data was also collected to enable a comparison of the data from the adult surveys with student data to help understand how various types and intensities of TUPE program implementation related to observed student outcomes. Using data from these sources, Chapter 7 will discuss the effects of school-level policies and practices on student exposure to TUPE programming and Chapter 8 will discuss the impact of school-level policies and practices on student tobacco use outcomes and tobacco use precursors.

This chapter will provide a description of the responses across the four adult surveys (teacher, site administrator, site TUPE/Health Coordinator, and District TUPE/Health Coordinator) with respect to questions about the teachers' knowledge of their local TUPE Program and knowledge of the CDC Tobacco Control Program Guidelines (CDC, 1994). In addition to the quantitative data collected through the self-report surveys, qualitative data was collected from 17 randomly selected middle (n=12) and high (n=5) schools from across the 12 regions, with the intent to sample at least one school per region. Site visits at these schools were conducted to determine how well their TUPE programs reflected the 1994 CDC Guidelines for school-based TUPE programs.

Adult Surveys: Responses to Items Related to CDC Guidelines

As discussed in Chapter 1, surveys were administered to adults at both the school site level and the district level. The site administrator was typically the principal or assistant principal in charge of all health-related curricula. The site coordinator was either the designated TUPE Coordinator or if there was none, then some other teacher responsible for the health curriculum at the site. Finally, the teachers were those who happened to be in the classrooms of students selected for participation in this study. It is noteworthy that some of these teachers had had no previous involvement with TUPE. These teachers completed their survey while their class completed the student survey.

CDC Guideline Number One: Develop and Enforce a School Policy on Tobacco Use

There was high consensus on the items related to school policy. The majority of the adult respondents (range: 77.9 percent - 98.2 percent) said they were aware of school and district tobacco use/tobacco-free policies. When asked how these policies were communicated at the school level, the most common responses were:
1) parent/student/employee handbooks, 2) staff meetings, 3) posters/signs/fliers, and 4) email or website postings. **Table 6.1** provides responses to questions about tobacco use policies. In general, adults at the district and school sites agreed that the policies applied to both students and adults and were enforced 24 hours per day. In general, teachers were less aware (77.9 percent) than site coordinators (89.7 percent) and site administrators (89.9 percent) that the policy also applied to visitors (see Table 6.1).

Answers regarding consequences of the policies for students varied, suggesting that while there may be a policy in place, the consequences of violating the policy were either not well developed or not clearly communicated to staff, or both. Again, there was more congruence among administrators than teachers.

District coordinators responded similarly to site staff in their perceptions about policy enforcement and consequences of violating those policies, compared to similar assessments conducted using the 2001-2002 TUPE evaluation data. More district coordinators than site staff believed that the consequences of smoking at school involved referral to a special class, referral to a peer counselor, parents being called in, referral to a tobacco use cessation clinic, or requirement to attend Saturday school. Teachers differed from all other staff in their responses to this item. These disparities may be a result of district policies that allow school administrators some discretion in determining the consequences of policy violations at the site level. It could also reflect imperfect communication from the district to the school and from school administrators to staff about the policy enforcement protocol and the consequences of violating those policies. **Table 6.2** shows the response rates for teachers who taught health-related subjects and for teachers who did not teach health-related subjects.[1] The response rates were similar to those reported for adult respondents in the 2001-2002 IETP report. The responses to the questions about enforcement of the school's tobacco-free policy were higher on most questions for “health” teachers compared to “non-health” teachers. Surprisingly, far more “non-health” teachers (75.0 percent) than “health” teachers (47.4 percent) thought that security guards or school resource officers were responsible for enforcing the policy.

[1] Science and health teachers in middle schools; health and physical education teachers in high schools.

Table 6.1 Staff Reports of Adherence to CDC Guidelines Component 1: Tobacco Use Policies and Enforcement				
	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	Site Administrator (Percent) [CI]	District Coordinator (Percent) [CI]
To whom the policy applies				
Students	85.2% [82.5, 87.6]	92.2% [85.0, 96.2]	98.2% [96.8, 98.9]	—
Teachers and staff	83.9% [80.1, 87.1]	92.1% [84.9, 96.0]	93.6% [86.4, 97.1]	—
School visitors	77.9% [74.0, 81.5]	89.7% [82.4, 94.2]	89.9% [83.1, 94.2]	—
Don't know	9.9% [7.8, 12.3]	6.5% [2.9, 14.1]	1.0% [0.3, 3.4]	—
Responsible for enforcing the policy at school				
Administrators	90.8% [88.2, 92.9]	96.4% [92.7, 98.2]	96.0% [87.1, 98.8]	—
Faculty and Staff	78.5% [73.1, 83.1]	85.2% [79.0, 89.9]	78.3% [67.5, 86.3]	—
Security Guards/School Resource Officers	69.0% [65.3, 72.4]	82.2% [76.0, 87.1]	77.7% [69.6, 84.1]	—
Students	12.9% [10.4, 15.9]	24.3% [14.5, 37.8]	21.2% [11.8, 35.1]	—
Policy enforced during school hours				
A great deal	83.3% [75.2, 89.1]	76.0% [63.1, 85.4]	90.5% [83.1, 94.9]	85.4% [80.2, 90.6]
Moderately	12.1% [7.9, 17.9]	21.9% [12.8, 35.0]	9.5% [5.1, 16.9]	13.7% [8.7, 18.7]
Not too much	4.2% [2.1, 8.2]	1.6% [0.6, 4.1]	0.0% [—]	0.9% [-0.5, 2.3]
Not at all	0.4% [0.2, 1.0]	0.5% [0.1, 2.9]	0.0% [—]	0.0% [—]
Consequences for offenses on school grounds				
Suspension	53.1% [47.0, 59.0]	60.0% [50.8, 68.5]	60.9% [48.8, 71.8]	56.5% [49.54, 63.7]
Getting a ticket	9.5% [6.4, 14.0]	35.9% [25.9, 47.3]	37.7% [28.5, 48.0]	30.8% [24.1, 37.4]
Referred to a special class	11.4% [8.8, 14.6]	24.7% [15.9, 36.3]	36.3% [30.6, 42.4]	65.7% [58.9, 72.6]
A special class in lieu of suspension	4.4% [2.5, 7.6]	21.7% [15.8, 29.1]	26.0% [17.7, 36.4]	36.8% [29.9, 43.8]
An adult counselor	17.7% [14.7, 21.2]	35.8% [28.5, 43.7]	37.6% [30.3, 45.5]	63.4% [56.5, 70.4]
A peer counselor	4.8% [3.4, 6.6]	10.8% [6.3, 17.9]	14.0% [7.9, 23.6]	37.3% [30.3, 44.3]
Punishment for smoking	12.4% [9.3, 16.3]	11.6% [8.1, 16.4]	15.3% [11.4, 20.1]	8.6% [4.5, 12.6]
Parents are called in	19.2% [15.0, 24.1]	41.7% [29.6, 54.9]	49.4% [39.6, 59.3]	57.6% [50.5, 64.8]
A tobacco use cessation clinic	4.4% [2.9, 6.6]	35.8% [27.8, 44.6]	36.1% [27.8, 45.4]	70.8% [64.2, 77.4]
Required to go to Saturday school	2.2% [1.2, 4.0]	19.7% [11.3, 32.1]	17.1% [9.9, 28.0]	42.1% [34.9, 49.2]

[1] All teachers; Brackets contain 95 percent confidence interval.

Table 6.2 Teacher Reports of Adherence to CDC Component 1 – Tobacco Use Policies, by Subject Matter Taught by Middle/High School Teachers

	Teachers Who Teach Health-Related subject(s)[1] (Percent) [CI]	Teachers Who Do Not Teach Health-Related subject(s) (Percent) [CI]
To whom the policy applies		
Students	89.9% [83.6, 93.9]	83.9% [80.7, 86.6]
Teachers and staff	83.2% [74.9, 89.2]	84.1% [78.8, 88.2]
School visitors	76.9% [61.6, 87.4]	78.2% [74.2, 81.8]
Don't know	7.7% [3.2, 17.2]	10.5 [7.4, 14.6]
Responsible for enforcing the policy at school		
Administrators	89.6% [81.9, 94.6]	91.2% [86.9, 94.2]
Faculty and Staff	71.5% [53.7, 84.4]	80.5% [74.0, 85.7]
Security Guards/School Resource Officers	47.4% [34.8, 60.4]	75.0% [69.4, 79.9]
Students	16.4% [11.7, 22.3]	11.9% [9.0, 15.6]
Policy enforced during school hours		
A great deal	82.7% [73.7, 89.0]	83.5% [72.9, 90.5]
Moderately	11.4% [8.2, 15.6]	12.3% [7.2, 20.1]
Not too much	5.4% [1.3, 20.4]	3.9% [1.8, 8.1]
Not at all	0.5% [0.1, 3.8]	0.4% [0.1, 1.1]
Consequences for student's offenses on school ground		
Suspension	62.1% [50.5, 72.6]	50.2% [44.0, 57.0]
Getting a ticket	16.9% [6.7, 36.6]	7.5% [5.5, 10.3]
Referred to a special class	11.9% [8.6, 16.3]	11.2% [8.1, 15.3]
A special class in lieu of suspension	3.6% [1.9, 6.9]	4.6% [2.4, 8.8]
An adult counselor	20.0% [15.2, 25.7]	17.1% [13.1, 21.9]
A peer counselor	5.7% [2.9, 10.6]	4.5% [3.0, 6.8]
Punishment for smoking	7.9% [4.8, 12.7]	13.7% [9.7, 18.9]
Parents are called in	30.9% [22.6, 40.8]	15.8% [11.1, 22.1]
A tobacco use cessation clinic	4.0% [1.6, 9.2]	4.6% [2.9, 7.2]
Required to go to Saturday school	1.9% [0.6, 5.3]	2.2% [1.1, 4.6]

[1]Science and Health teachers in middle and high schools.

CDC Guideline Number Two: Provide Instruction about the Negative Physiologic and Social Consequences of Tobacco Use, Social Influences on Tobacco Use, Peer Norms Regarding Tobacco Use, and Refusal Skills

Beginning in the 2002-2003 school year, school districts were required to submit a Local Education Agency Plan (LEAP) to CDE for federal entitlements as part of the No Child Left Behind (NCLB) Act of 2001. Although the TUPE program is a state-funded program, it was included in the LEAP template under Performance Goal 4: All students will be educated in learning environments that are safe, drug-free, and conducive to learning. Districts receiving TUPE entitlement funds were required to identify one program addressing alcohol, violence, other drugs, and tobacco that they would implement to at least 50 percent of students in an identified target group. The duration of each district's LEAP is five years (July 1, 2003 through June 30, 2008). Districts are required to have their plan for Goal 4 fully implemented by the end of the 2005-2006 school year. Districts were just beginning to implement the plan during the 2003-2004 school year and were in varying degrees of implementation during the data collection efforts for this report. Most of the questions about program implementation refer to the school year 2002-2003, prior to the development of the LEAP.

Tables 6.3 and **6.4** provide an overview of instructional programs related to CDC Components two and three, addressing the content of the TUPE curriculum and the developmental appropriateness of the grade level sequencing of TUPE messages. In general, the perception of the district coordinators with regard to instructional content was not congruent with responses from site staff. The CDC Guidelines listed several topics that have been found to be important components of effective tobacco use prevention programs. The adult respondents were asked to mark all of the topics taught in tobacco use prevention lessons. Consistent with the findings in 2001-2002, district coordinators tended to report a higher frequency for each of the topics listed (average = 78.6 percent), compared to the other staff respondents (teacher average = 42.2 percent; site TUPE coordinator average = 62.5 percent; chi square = 327.15, df = 20, $p<0.0001$).

Table 6.3 Staff Reports of Adherence to CDC Guidelines Components 2 and 3: TUPE Curriculum – Content

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	District Coordinator (Percent) [CI]
Name of curriculum used			
Across Ages	0.0% [—]	0.3% [0.0, 2.1]	1.1% [-0.4, 2.6]
All Stars™	0.0% [—]	2.9% [0.5, 16.1]	0.9% [-0.5, 2.2]
East Texas Experiential Learning Center	0.0% [—]	0.0% [—]	0.0% [—]
Keep a Clear Mind	0.1% [0.0, 0.7]	0.5% [0.1, 2.1]	1.5% [-0.3, 3.3]
Botvin's LifeSkills™ Training	0.6% [0.1, 2.6]	1.8% [0.8, 4.4]	16.7% [11.3, 22.0]
Minnesota Smoking Prevention Program	0.6% [0.1, 3.1]	8.1% [5.5, 12.0]	39.4% [32.4, 46.5]
Positive Action	0.0% [—]	1.5% [0.4, 4.9]	3.6% [0.9, 6.3]
Project ALERT	6.4% [3.8, 10.3]	11.5% [7.6, 17.0]	60.3% [53.2, 67.3]
Project SUCCESS	0.0% [—]	3.5% [1.6, 7.4]	3.8% [1.1, 6.6]
Project Toward No Drug Abuse (TND)	0.6% [0.1, 3.1]	4.0% [1.4, 11.4]	41.1% [34.0, 48.2]
Project Toward No Tobacco Use (TNT)	2.6% [0.7, 9.8]	12.7% [7.7, 20.0]	40.7% [33.6, 47.8]
Too Good for Drugs	1.3% [0.3, 5.3]	8.3% [4.5, 15.1]	54.2% [47.0, 61.3]
Family Matters	0.4% [0.1, 2.3]	4.0% [1.0, 14.6]	0.0% [—]
Nurse-Family Partnership	0.2% [0.0, 1.2]	2.3% [0.4, 12.0]	0.0% [—]
Project STAR	0.5% [0.1, 1.5]	1.6% [0.7, 3.8]	0.0% [—]
Strengthening Families Program	0.6% [0.1, 2.5]	1.4% [0.4, 4.8]	2.6% [0.3, 4.9]
Here's Looking at You, 2000	4.7% [2.8, 7.6]	11.3% [7.5, 16.6]	28.7% [22.2, 35.2]
Quest Skills for Adolescence	1.6% [0.8, 3.2]	2.8% [1.5, 5.3]	8.8% [4.7, 12.8]
TAP or TEG (readiness to quit and tobacco use cessation)	1.6% [0.6, 3.9]	23.7% [14.2, 36.8]	62.4% [55.4, 69.4]
Other published curricula (ACS, ALA, & AHA)	8.6% [5.8, 12.6]	28.0% [22.0, 34.9]	50.9% [43.6, 58.1]
Other curricula (developed by school or county)	16.9% [12.4, 22.7]	37.0% [30.3, 44.2]	34.2% [27.3, 41.0]
Tobacco infusion curriculum	1.8% [0.8, 4.0]	15.2% [7.9, 27.3]	50.9% [43.6, 58.1]

Table 6.3 Staff Reports of Adherence to CDC Guidelines Components 2 and 3: TUPE Curriculum – Content

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	District Coordinator (Percent) [CI]
Teaching new science-based curriculum			
Percent of respondents reporting teaching	13.7% [10.3, 18.0]	48.5% [35.9, 61.2]	—
Topics of Instruction			
Effects of tobacco on health	74.0% [69.3, 78.2]	75.9% [63.0, 85.4]	96.3% [93.6, 99.0]
How many young people smoke	38.5% [32.0, 45.5]	67.8% [55.0, 78.3]	74.3% [68.0, 80.6]
Reasons why young people smoke	52.6% [46.6, 58.5]	69.7% [57.0, 79.9]	85.3% [80.2, 90.4]
Cost of using tobacco	—	—	79.2% [73.4, 85.1]
Social consequences of using tobacco	50.4% [41.1, 59.7]	64.8% [54.5, 73.9]	82.4% [76.9, 87.9]
Second-hand smoke	55.5% [50.4, 60.4]	70.6% [60.0, 79.4]	90.7% [86.4, 94.8]
Social influences promoting tobacco use	47.1% [38.1, 56.4]	67.2% [55.0, 77.5]	80.1% [74.4, 85.9]
Behavioral skills for resisting offers	34.9% [30.9, 39.2]	61.1% [50.7, 70.6]	83.5% [78.2, 88.9]
General personal and social skills	29.6% [25.0, 34.6]	62.0% [49.4, 73.1]	81.5% [75.9, 87.1]
Tobacco use cessation	15.3% [11.1, 20.7]	49.7% [38.9, 60.5]	65.2% [58.3, 72.1]
Tobacco advertising and marketing	54.4% [45.6, 62.9]	64.7% [54.7, 73.6]	85.1% [80.0, 90.3]
Smokeless tobacco	—	60.9% [50.7, 70.2]	55.6% [48.4, 62.8]
Cigar use	11.5% [7.4, 17.6]	34.1% [24.4, 45.3]	39.9% [32.8, 46.9]

[1]Teachers that taught prevention lessons last year (2002-2003).
*CDC recommended programs.

Table 6.4 Staff Reports of Adherence to CDC Guidelines Components 2 and 3: TUPE Curriculum – Methods of Delivery, Decision-Making Process

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	District Coordinator (Percent) [CI]
Method of delivery (Somewhat/A great deal)			
Classroom discussion	86.3% [75.0, 92.9]	96.3% [93.0, 98.0]	96.9% [94.2, 99.6]
Small group activities	45.9% [37.3, 54.8]	80.8% [74.7, 85.7]	22.2% [15.5, 28.8]
Lecture	69.7% [61.1, 77.0]	79.4% [73.3, 84.4]	6.1% [2.2, 9.9]
Student worksheets	41.8% [33.0, 51.2]	70.4% [60.4, 78.9]	11.6% [6.6, 16.6]
Environmental strategies	—	40.9% [30.0, 52.8]	—
Family and community collaboration	—	28.9% [19.9, 39.9]	—
Media literacy	—	62.5% [52.2, 71.9]	—
Peer helping/peer leaders	—	52.2% [40.9, 63.3]	—
School policies	—	64.4% [55.4, 72.4]	—
Service learning	—	32.4% [20.9, 46.4]	—
Tobacco use cessation	—	61.0% [50.1, 70.8]	—
Youth development/caring schools and caring classrooms	—	46.9% [36.2, 58.0]	—
Role-playing	31.5% [23.0, 41.4]	54.9% [45.4, 64.0]	18.0% [12.0, 23.9]
Decision-making about curricula/topics used			
Teacher makes decision	52.4[2]% [46.7, 58.0]	—	2.0% [-0.2, 4.1]
Site coordinator makes decision	—	50.3% [37.8, 62.8]	9.5% [4.9, 14.1]
District coordinator makes decision	—	—	13.0% [7.7, 18.2]
Site/district administrator makes decision	50.1% [43.2, 57.0]	—	—
Other	—	—	75.6% [68.9, 82.4]

[1]Teachers that taught prevention lessons last year (2002-2003).
[2] "Make all/some decisions" vs. "Make the decisions."

It was unclear why teachers who reported teaching tobacco lessons in the previous year reported a lower prevalence of having taught all of the topics – except for the effects of tobacco on health – when compared to all other adult respondents. Health effects of tobacco and SHS were the most widely named topics across adult respondents, followed by reasons why young people smoke and the effects of tobacco advertising. Only 29.6 percent of teachers who taught prevention lessons in the past year included general personal and social skills, while 62.0 percent of site coordinators and 81.5 percent of district coordinators marked this topic. The average proportion of teachers checking “yes” for the 11 components asked of all adult respondents was 42.2 percent. The corresponding proportion for site coordinators was 62.5 percent and for district administrators was 78.6 percent. These numbers were lower than corresponding numbers reported in the 2001-2002 TUPE evaluation data. Again, as with the policy questions, there was great disparity between what district staff thought schools were doing and what school site staff reported doing. Now that middle schools can compete for grant money over and above what they receive as entitlement through the district, not all schools in a district are necessarily implementing programs equally. It is likely that the district coordinator responses were influenced by their assessments of the overall implementation of TUPE in all schools in the district, even if the particular school being evaluated did not happen to feature the program or TUPE program component being taught elsewhere in the district.

When asked about the method of delivery of the tobacco lessons, the overwhelming majority of TUPE-experienced teachers (99.8 percent), site coordinators (96.3 percent), and district coordinators (96.9 percent) marked class discussion. Lecture (91.7 percent) was the next most frequently marked method by TUPE-experienced teachers followed by small group activities (67.8 percent), and role-playing (50.6 percent). About half of TUPE-experienced teachers marked that teachers made the decision about the curricula used and half marked that site coordinators and/or district administrators made the decision.

A truly effective TUPE program should feature all of the recommended TUPE components. However, teachers seem reluctant to employ the most interactive of the recommended components, namely small group activities and role-playing. Increased teacher training regarding how to conduct TUPE lessons might remedy this problem.

CDC Guideline Number Three: Provide Developmentally Appropriate TUPE in Grades K-12; This Instruction should be Especially Intensive at the Junior High/Middle School Level and be reinforced at the High School Level

District coordinators were more likely to report that specific curricula were being used. (chi square = 1,100, df = 42, $p < 0.0001$). The average proportion of district administrators checking “yes” for each of 14 listed TUPE curricula was 22 percent whereas the corresponding proportions for teachers and site TUPE coordinators were 2.2 percent and 8.0 percent, respectively. Of the 14 listed TUPE curricula, the programs most frequently cited by district coordinators were: TAP/TEG (62.4 percent), Project ALERT (60.3 percent), Too Good for Drugs (54.2 percent), AHA, ALA, or ACS

curriculum (50.9 percent), Project Toward No Drug Abuse (41.1 percent), Project Toward No Tobacco Use (40.7 percent), Minnesota Smoking Prevention Program (39.4 percent), and Here's Looking at You, 2000 (29.7 percent).

Teachers and site coordinators most often reported that they used curricula developed by the school or county. Thirteen (13.7) percent of teachers and 48.5 percent of site coordinators reported that they were teaching a science-based program, which was supposedly one of a limited number of TUPE programs identified by the CDC or the CDE as a model program based on the success of its evaluations published in the peer reviewed scientific literature. Each year, districts are provided a list of research-based strategies identified by CDE as promising or effective that should be incorporated into a comprehensive tobacco use prevention program.

Most schools were not compliant with CDC and CDE recommendations to use only science-based programs, a majority (51.5 percent) of site coordinators acknowledged using TUPE programs that were not science-based. Without more resources, however, schools may be reluctant to purchase one of the science-based programs from a limited selection.

CDC Guideline Number Four: Provide Program-specific Training for Teachers

Responses to questions addressing CDC Guidelines four, five, and six are provided in **Table 6.5**. Approximately one fourth of site coordinators and teachers reported receiving one or more days of in-service training for tobacco use prevention, with only 16.6 percent of teachers reporting that they were trained to deliver a specific published tobacco curriculum. These numbers were smaller than the numbers reported in the previous (2001-2002) IETP report. The increased pressure on teachers in the classroom to improve student test scores has made it difficult to get teachers released from class to attend TUPE trainings. Fifty-three (53.0) percent of site coordinators and 23.4 percent of teachers felt they were "a great deal" prepared to teach about tobacco use prevention.

CDC Guideline Number Five: Involve Parents or Families in Support of School-based Tobacco Use Prevention Programs

Based on feedback from a group of educators and tobacco control experts, the questions about parent involvement were modified to provide more specific information for the current IETP. Table 6.5 describes the percentages of teachers, site coordinators, and site administrators who reported using of a variety of strategies for involving parents in school-based tobacco control efforts and who reported using them to a "modest extent" or to a "very great extent". The results were promising compared to results reported in previous TUPE evaluations, with 82.1 percent of site administrators and 56.4 percent of site coordinators responding that tobacco materials were distributed to parents. Distributing tobacco use cessation materials to parents or setting up tobacco control displays at "Open House" were cited more than 40 percent of the time by site TUPE coordinators and by site administrators as strategies used at the school. The

discrepancy between teachers' ratings and ratings by the other staff on these questions is cause for concern. The average proportion of teachers endorsing each of the nine strategies for involving parents was 21.1 percent whereas it was 31.4 percent for site coordinators and 42.4 percent for district administrators. The teachers' lower ratings may reflect the difficulty that schools generally have involving parents, especially low-income parents, in any optional school-based activities (Hemann and Earle, 2000). The literature makes clear the importance of the influence of parents on their children's proclivity to take up the tobacco use habit (Distefan et al., 1998). What is not so clear is whether schools have the necessary resources and strategies to effectively capitalize on this acknowledged impact of parents on their children's tobacco use habits.

CDC Guideline Number Six: Support Tobacco Use Cessation Efforts among Students and all School Staff who use Tobacco

Table 6.5 also shows the responses of teachers who taught prevention lessons during the last school year, and responses from site and district coordinators regarding smoking cessation efforts. Most schools appeared to have some type of smoking cessation resource at school for students. Forty-two (42.7) percent of teachers, 25.0 percent of site coordinators, and 33.9 percent of site administrators responded ‘no’ when asked if their school had special classes, groups, or programs for students who wanted help quitting smoking. These rates are roughly equal to those found in the 2001-2002 IETP, although the question was asked a little differently, so direct comparisons are not possible. Typically, high schools were more likely to offer tobacco use cessation programs at the site level than middle schools, because there are relatively few regular smokers in grades 6 through 8 compared to the number of regular smokers in grades 9 through 12. Our results supported this observed difference in availability of tobacco use cessation programs between middle and high schools. It is not unusual for schools to collaborate with community-based agencies to provide services that are more successfully conducted away from the school setting. One barrier to conducting smoking cessation classes at school is that students have to be pulled out of class or must have parents drive them to attend Saturday school. Furthermore, teachers or other program facilitators must be paid to work on Saturdays. Teachers are not always willing to release students, especially high-risk students, from course work to attend tobacco use cessation classes during school time.

Table 6.5 Staff Reports of Adherence to CDC Guidelines Components 4, 5 and 6: Parent Involvement, Teacher Training and Tobacco Use Cessation Efforts

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	Site Administrato (Percent) [CI]	District Coordinator (Percent) [CI]
Involvement of Parents and Families (Modest Extent to Very Great Extent)				
Included parents in homework assignments	10.6% [7.5, 14.9]	24.6% [18.3, 59.0]	32.9% [25.1, 41.7]	—
Held meetings with parents	1.5% [0.2, 9.3]	20.0% [10.7, 34.3]	27.7% [17.9, 40.3]	—
Distributed materials to parents	15.5% [11.4, 20.8]	56.4% [44.8, 67.4]	82.1% [72.3, 88.9]	—
Distributed newsletters/educational materials	8.1% [5.4, 11.9]	42.5% [31.7, 54.0]	59.6% [49.8, 68.7]	
Provided tobacco use cessation information	5.7% [3.5, 9.3]	40.0% [29.5, 51.4]	43.2% [32.6, 54.6]	—
Displays at open house for parents	9.3% [6.4, 13.3]	49.4% [38.9, 60.0]	46.2% [35.9, 56.8]	—
Invited parents to be guest speakers	3.0% [1.6, 5.5]	9.5% [5.5, 15.8]	8.6% [5.8, 12.5]	—
Involved parents in school related activities	4.7% [2.2, 9.8]	14.7% [9.4, 22.3]	19.3% [12.5, 28.6]	
Other involvement	4.8% [2.2, 10.1]	25.6% [10.7, 49.8]	61.6% [38.3, 81.6]	—
Professional Development Topics				
Developmental assets	19.9% [12.6, 30.0]	49.3% [41.6, 57.0]	—	—
Youth Development	18.8% [12.6, 27.1]	62.0% [51.6, 71.5]	—	—
Science-based prevention and intervention programs	20.8% [14.4, 29.1]	50.2% [39.8, 60.6]	—	—
Readiness to Quit programs	7.0% [3.6, 13.3]	44.2% [31.1, 58.2]	—	—
Tobacco use cessation programs	8.2% [4.6, 14.4]	49.2% [35.8, 62.7]	—	—
Distributed a newsletter about the TUPE	—	—	—	47.9% [40.7, 55.1]
Disseminated fliers about the trainings	—	—	—	74.6% [68.4, 80.9]
Distributed a training video	—	—	—	13.8% [8.8, 18.8]
Disseminated information on website or via email listservs	—	—	—	61.9% [54.8, 68.9]
Distributed other resources	—	—	—	53.9% [46.7, 61.1]
Other	2.8% [1.3, 5.8]	75.5% [61.1, 84.4]	—	6.6% [3.1, 10.2]

Table 6.5 Staff Reports of Adherence to CDC Guidelines Components 4, 5 and 6: Parent Involvement, Teacher Training and Tobacco Use Cessation Efforts

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	Site Administrato (Percent) [CI]	District Coordinator (Percent) [CI]
Teacher Training				
One or more days of In-service training	23.0% [16.0, 31.9]	24.8% [18.3, 32.6]	—	—
Number of tobacco-specific in-service training	—	—	—	9.08 [5.9, 12.2]
Were trained to deliver a specific published tobacco use curriculum	16.6% [10.0, 26.3]	—	—	—
Preparedness to teach (a great deal)	23.4% [17.9, 29.9]	53.0% [44.5, 61.3]	—	—
School level coordinator supports the TUPE (somewhat or a great deal)	62.1% [53.1, 70.3]	—	—	—
School site administrator supports the TUPE (somewhat or a great deal)	—	88.2% [78.4, 93.9]	92.8% [78.0, 97.9]	—
District level coordinator/administrator supports the TUPE (somewhat or a great deal)	63.6% [58.0, 68.9]	84.5% [75.1, 90.8]	89.8% [85.3, 93.0]	85.8% [80.8, 90.8]
Tobacco Use Cessation				
Resources for students at school	32.6% [23.3, 43.4]	58.7% [47.5, 69.2]	64.6% [52.7, 74.9]	—
Resources for staff/teacher at school	29.7% [25.4, 34.5]	56.1% [49.3, 62.7]	38.1% [27.7, 49.6]	—

[1]Teachers who taught prevention lessons last year.

Positive Consequences of Receiving TUPE Funds

A new question assessing the positive consequences of receiving TUPE funds was added in 2003-2004. Five districts (representing eight participating schools) reported that they did not receive TUPE funds. An additional fifty-four (54.4) percent reported that they received funding, but not enough. Funding to implement health programs was the most frequently marked option. The next most frequently marked options, in order, were: links with community-based organizations, funding to provide training, provide funding for teacher substitutes during the time that the classroom teacher is receiving TUPE training, and links with local lead health agencies (**Table 6.6**). Eighty-three (82.6) percent also marked "other" but did not elaborate. As might be expected, district coordinators had higher response rates to this question than did teachers or site administrators. This seems reasonable because TUPE funding is allocated to the district rather than directly to the schools.

Table 6.6 Positive Consequences Associated with TUPE

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	Site Administrator (Percent) [CI]	District Coordinator (Percent) [CI]
Links with local lead health agencies	—	46.0% [39.3, 52.8]	40.7% [31.7, 50.4]	69.7% [63.1, 76.3]
Links with community based organizations (AHA, ACS, ALA)	—	39.3% [32.7, 46.4]	36.0% [27.6, 45.3]	76.2% [70.1, 82.4]
Funding to implement health programs	—	46.5% [39.4, 53.8]	45.2% [35.2, 55.6]	83.0% [77.6, 88.5]
Funding to provide training and substitute coverage	—	42.0% [34.4, 50.0]	35.3% [28.4, 42.9]	75.8% [69.6, 82.0]
Other	—	25.1% [14.5, 39.8]	2.9% [1.6, 5.4]	82.6% [77.1, 88.0]

[1]All teachers

Barriers to Teaching Tobacco Use Prevention

Lack of time was the most frequently cited barrier to teaching tobacco lessons across the different types of adult respondents. Interestingly, district coordinators cited lack of time more frequently (86.5 percent) than school site staff (teachers, site coordinators, and site administrators) by at least 30 percentage points. There was more congruence among responses on several other barriers, such as 1) tobacco use is not part of the school's regular curriculum (range = 5.5 percent to 66.3 percent), 2) lack of instructional materials (range = 10.3 percent to 19.5 percent), and 3) tobacco use prevention is not part of normally assessed student outcomes (range = 20.1 percent to 48.7 percent) (**Table 6.7**). Sixty-six (66.3) percent of teachers reported that TUPE was not part of their regular curriculum. A new response option was added to the 2003-2004 district survey about use of a science-based tobacco use education curriculum. Thirty-six (36.1) percent of district coordinators responded that the new requirement by the NCLB Act to

use only science-based programs was a barrier. When asked how the new science-based requirement affected the TUPE program, the most commonly cited response was that new curriculum had to be purchased, thus increasing the cost of materials and teacher training. Additionally, the science-based curricula were described by some as more difficult to implement. On the other hand, some reported that this requirement strengthened their program by making it more "grounded" and gave them more "power" and authority with the schools.

Table 6.7 Barriers Associated with TUPE

	Teacher[1] (Percent) [CI]	Site Coordinator (Percent) [CI]	Site Administrator (Percent) [CI]	District Coordinator (Percent) [CI]
TUPE is not part of my curriculum	66.3% [62.5, 69.9]	15.8% [10.9, 22.4]	10.0% [4.9, 19.6]	5.5% [2.2, 8.8]
TUPE is not mandated in my school or district	14.2% [10.2, 19.5]	6.6% [2.3, 17.4]	11.4% [8.8, 14.6]	4.8% [1.7, 7.8]
Tobacco use prevention is not part of student outcomes that are assessed	26.3% [22.5, 30.5]	20.1% [13.0, 29.7]	37.3% [27.6, 48.1]	48.7% [41.5, 55.9]
Our teachers are not interested or committed to it	—	—	6.5% [3.7, 11.3]	—
Lack of adequate instructional materials (or curricula)	19.5% [15.4, 24.5]	16.6% [10.8, 24.7]	18.5% [10.8, 29.7]	10.3% [5.9, 14.7]
Lack of time	38.3% [34.2, 42.6]	55.4% [45.6, 64.9]	56.7% [46.0, 66.9]	86.5% [81.5, 91.4]
Lack of substitute coverage and/or funding to pay for substitutes	4.8% [3.2, 7.1]	13.3% [7.0, 23.7]	11.6% [6.2, 20.6]	11.6% [7.0, 16.2]
Received funding, but not enough	—	—	—	54.4% [47.2, 61.6]
We do not receive TUPE funding	—	—	—	2.4% [0.2, 4.6]
Our school district has not made tobacco use prevention a high priority	14.0% [11.3, 17.4]	13.1% [7.3, 22.5]	13.6% [7.4, 23.5]	42.7% [35.5, 49.8]
Our school administrator has not made tobacco use prevention a high priority	12.3% [8.8, 16.9]	7.2% [4.2, 12.1]	15.3% [9.1, 24.6]	42.9% [35.8, 50.0]
I have not received adequate tobacco use prevention training	21.5% [16.9, 26.8]	9.4% [6.2, 14.1]	21.9% [15.8, 29.6]	1.9% [-0.1, 3.8]
New CDE requirement to use only science-based programs required by NCLB act	—	—	—	36.1% [29.2, 43.0]
Other	4.4% [3.4, 5.7]	18.4% [9.8, 31.9]	14.9% [6.7, 29.7]	9.2% [5.1, 13.4]

[1]All teachers

In summary, the major benefits of TUPE funding included increased resources to support health and the enabling of links to community programs and local health agencies. The major barriers to TUPE, especially from the teacher perspective, included lack of time in the face of competing priorities, lack of resources, lack of mention of

tobacco in the standard curriculum and lack of accountability in the form of regular testing of students' knowledge of TUPE.

Evaluation Plan

District coordinators were asked whether or not they had an evaluation plan for the TUPE program and how it was implemented if they had one. Ninety-seven (97.6) percent reported that they conducted some type of evaluation and that the results were reported. Seventy-eight (78.3) percent reported that they had either an outside evaluator (55.8 percent) or a district-employee evaluator (22.5 percent). Only 17.3 percent reported the results to students. Most commonly the results were presented to district administrators (86.8 percent), teachers (64.9 percent), site administrators (78.3 percent), and community groups (58.5 percent) and were used to improve implementation and/or redirect the focus based on survey findings. Ninety-two (92.1) percent reported that they shared information with their local lead agency for tobacco control.

Almost all schools reported conducting some type of evaluation of their TUPE activities, though few students reported hearing about the evaluation results. The results were most often shared with local tobacco control agencies, district administrators and school administrators and shared fairly often with teachers and community groups.

School Site Visits

Recruitment
Six middle schools and twelve high schools were randomly selected to participate in site visits. The aim was to conduct site visits to obtain a more ‘in-depth’ and qualitative look at TUPE programs within the school setting. The schools were sampled in such a way as to ensure a roughly representative sample. One school, which had agreed to participate, cancelled the site visit at the last minute leaving seventeen schools that participated in the site visits.

Data Collection

WestEd staff used a standard instrument, the “Site Visit Intake” form for data collection during the school visits. The data collection form was comprised of approximately 25 items, representing a combination of open-ended and multiple-choice questions. These items were designed to prompt surveyors to take note of the range and content of materials used for each school's TUPE program. The intake form was based on key concepts from the CDC’s Guidelines for School Health Programs to Prevent Tobacco Use and Addiction (1994). Surveyors were asked to assess: 1) which teaching/prevention strategies their TUPE program appeared to be using and 2) how coordinated/infused the tobacco use prevention appeared to be with other elements of school programming and curricula. Interviews were also conducted at each site.

Data from the site visits was reviewed for recurring themes and characteristics as well as to identify anomalous or unique features of the site's TUPE programs. Because site visits reflected such a small proportion of the schools who participated in the IETP, the data should be viewed as representative only of TUPE programs that were in place at this subset of schools.

Results

The site visit results presented here are not intended to reflect the full range of TUPE programs in all schools, but instead are meant to provide a deeper understanding of TUPE at a small cross-section of participating sites. Eleven of the schools reported that they had a TUPE program funded by CDE, two reported no such program, and four reported that they did not know. The TUPE Plan was obtained from seven schools. As was found in the 2001-2002 IETP, TUPE programs varied greatly from school to school. Each program emphasized different aspects of tobacco use, from prevention to media literacy, to the biology of the tobacco plant. Some programs were sustained throughout an entire year, while others were offered during specific semesters, and still others simply prescribed a certain number of hours of TUPE lessons that each student should receive over the course of the year. In the middle schools, tobacco use prevention was taught at all grade levels, primarily in health, science and physical education (PE) classes. Two high schools offered tobacco education in 9th grade only, three high schools had it in 9th and 10th or 11th grades, and five other high schools provided it in all grade levels. The majority of high schools offered tobacco education in health, biology, and peer mediation classes. The majority of schools reported that students received more than five hours per year of tobacco-specific education. Tobacco use prevention materials were available to teachers from a wide range of subject areas, but whether or not they ‘infused’ them into lesson plans seemed to depend on the teacher.

Participant sites produced a range of materials (e.g., curricula, lesson plans, posters, pamphlets and videos, etc.) that were available for review. Only eight schools provided at least one curriculum for review. Two schools used “Project Alert,” two used “Tobacco Free” infusion lessons, three used a curriculum called “Tobacco Control Program Curriculum,” and one used “Not on Tobacco.” “Here’s Looking at You” and “Discover: Skills for Life” were also listed as programs used to teach tobacco lessons. Seven schools provided lesson plans in lieu of a formal curriculum.

One of CDC’s primary recommendations was that schools “develop and enforce a school policy on tobacco use.” While signs indicating “A Tobacco-Free Facility” were clearly posted at 15 of the school sites, aspects of enforcement and application of the policy were impossible to assess beyond brief conversations with site coordinators and access to available materials. The second recommendation contained in the CDC Guidelines encouraged schools to “provide instruction about the short and long-term negative physiologic and social consequences of tobacco use, social influences on tobacco use, peer norms regarding tobacco use and refusal skills.” All of the schools used the social influences model by including instruction on how peers could influence a student's decision to use tobacco.

Ten schools reported that the program included “a lot” of information regarding the long-term consequences of smoking. Although it was once believed that youth were more responsive to the short-term consequences of tobacco use because issues like yellow teeth and bad breath are much more proximal and salient results of smoking for adolescents (Evans et al., 1978); Sussman and his associates (1995) found that incorporating the physical consequences of tobacco use into a prevention curriculum was an effective strategy.

At all but two sites, teachers reported discussing at least some key concepts surrounding “Normative Expectations” with their students, including the notion that youth who use tobacco are more likely to do so because they think tobacco use is highly prevalent, or the norm, among peers. Although it was not apparent in this study, students typically grossly overestimate peer use of tobacco (Sherman et al., 1983). Correcting this misconception is a critical aspect of teaching normative expectations for tobacco use (Hansen and Graham, 1991; CDC, 1994).

Encouragingly, only one school’s TUPE program was characterized as providing information only, while the other sites used at least one other alternative teaching method, such as peer leadership or interactive groups. Perhaps one of the most challenging, yet critical elements, of any type of health education program, is that it must be sustained and infused throughout the school environment and curricula. The majority of schools that had TUPE programs based on one-time events or presentations not connected to classroom lessons agreed that the use of “one-time events” did not constitute an effective tobacco use prevention program. Activities like the “Great American Smoke Out,” “Up in Smoke,” and “Red Ribbon Week” were among the most popular events that were apt to have little or no classroom follow-up for the majority of students. However, at one school all teachers received lesson plans to encourage follow up on the “Great American Smoke Out” and “Save A Sweetheart.” Clearly, such assemblies and activities have a lot of appeal to schools. They are fun and can involve the entire school, yet research does not support their effectiveness when used alone (CDE, 1998).

Eight of the sites provided tobacco use cessation services aimed at helping users to quit at school and a different set of eight sites referred their smokers to outside tobacco use cessation programs. The number of students referred into either program ranged from 5 to 20 per year. One high school referred students to a tobacco use cessation program on the Internet. Another high school hung posters with the 1-800-IQUIT phone number at various locations on campus.

Teacher training was not readily documented at most schools. All teachers using Project ALERT in two middle schools attended a one-day training. Most schools reported that the district provided in-service trainings for teachers, and schools that had been using the same materials for a number of years did not re-train teachers.

Conclusion

Results from the adult surveys were mixed, depending on the respondents' positions. Several issues may have contributed to the mixed results. First, schools were not sampled by district and cannot be considered to be representative of a district unless the school responding was the only school in the district. It is likely that the district coordinator would know about the TUPE program features common to all the schools in the district but equally likely that the district administrator would be unaware of TUPE program features that were unique to a specific school. Because funding for TUPE programs is disparate across the State, it is likely that TUPE-funded schools could afford TUPE program features not shared with other schools in the district. Some districts only have high schools, which suggests that the only tobacco funding for their schools would be through the competitive grant process. Second, districts serving grades four through eight receive entitlement funding for TUPE and some of their middle schools may receive funding through the competitive grant process. It is therefore typical that districts may have a tobacco use prevention plan that is not implemented universally across schools. Overall, schools seem to be implementing a variety of tobacco education programs ranging from one-day events to full semesters of research-based curricula.

As with the previous IETP report, there are some findings that are discouraging. The lack of consistency in school-level and district-level staff responses to questions about the tobacco policy at their school/district was a concern. Positively, data collectors conducting site visits observed visibly posted signs that tobacco use was not allowed on school sites. There was a small percentage of high schools that did not receive TUPE funding. These schools would not be required to have a policy in place. Chapters 7 and 8 will examine these differences. However, almost all school staff reported having a smoke-free school policy and most reported that it was being enforced, but it was unclear from the responses how well the schools did in communicating to students and staff what the consequences would be of violating the school's smoke-free policy. A successful program would ensure that all school staff, students, and parents were familiar with the policy and familiar with the consequences of violating it. This does not appear to be happening consistently.

The most discouraging finding, although not surprising, was the lack of site coordinators who felt prepared to teach about tobacco. It is increasingly difficult for teachers to be released from their classroom teaching responsibilities to attend all day trainings in tobacco use prevention. It is equally difficult to persuade teachers to attend Saturday trainings or trainings during breaks (winter/spring). Trainings after school for one or two hours do not provide teachers with enough information to teach research-based programs. Moreover, it is questionable how effective those trainings can be after the teachers have been with as many as 150 students over the course of a day in secondary schools. If schools are required to use only research-based programs for TUPE, teachers must have opportunities to attend trainings so that these programs can be taught consistently.

One of the greatest limitations of the site visits was that it was not possible to view the school's TUPE program ‘in action.’ Because WestEd staff reviewed materials, rather than observing classroom lessons, or school practices, it was difficult to determine how often or when the observed materials were used. As in so many areas of health seeking and risk taking behavior, the environment plays an important role in tobacco use, cigarette refusal, and tobacco use cessation. Furthermore, a deeper understanding of how the school environment and behavior of its adults prevents and/or facilitates smoking related behaviors among students is needed.

References

California Department of Education (CDE). 1998. Getting results: Part I, CA action guide to creating safe and drug-free schools and communities: Sacramento, CA: Healthy Kids Program Office.

Centers for Disease Control and Prevention (CDC). 1994. Guidelines for school health programs to prevent tobacco use and addiction. Morbidity and Mortality Weekly Report, 43(RR-2), 1-18.

Distefan, J. M., E. A. Gilpin, W. S. Choi, and J. P. Pierce. 1998. Parental influences predict adolescent smoking in the United States, 1989-1993. Journal of Adolescent Health, 22, 466-474.

Evans, R. I., R. M. Rozelle, M. B. Mittelmark, W. B. Hansen, A. L. Bane, and J. Havis. 1978. Deterring onset of smoking in children - knowledge of immediate physiological effects and coping with peer pressure, media pressure, and parent modeling. Journal of Applied Social Psychology, 8, 126-135.

Hansen, W. B. 1992. School-based substance abuse prevention - A review of the state-of-the-art in curriculum 1980-1990. Health Education Research, 7, 403-430.

Hansen, W. B. and J. W. Graham. 1991. Preventing alcohol, marijuana, and cigarette use among adolescents - peer pressure resistance training versus establishing conservative norms. Preventive Medicine, 20, 414-430.

Hemann, S. J. and A. Earle. 2000. Low-income parents: How do working conditions affect their opportunity to help school-age children at risk? American Educational Research Journal, 37, 833-848.

Sherman, S. J., C. C. Presson, L. Chassin, E. Corty, and R. Olshavsky. 1983. The False Consensus effect in estimates of smoking prevalence - underlying mechanisms. Personality and Social Psychology Bulletin, 9, 197-207.

Sussman, S., C. W. Dent, D. Burton, A. W. Stacy, and B. Flay. 1995. Developing school-based tobacco use prevention and cessation programs (p. 213). Thousand Oaks, CA: Sage.

CHAPTER 7

RELATIONSHIP OF SCHOOL-LEVEL POLICIES AND PRACTICES TO STUDENT PROGRAM EXPOSURE

CHAPTER 7: RELATIONSHIP OF SCHOOL-LEVEL POLICIES AND PRACTICES TO STUDENT PROGRAM EXPOSURE

CHAPTER HIGHLIGHTS

- **Across school types, tobacco use prevention lessons, hours of instruction (teacher report), infusion of tobacco information in mainstream lessons, and the use of non-traditional modes of instruction were positively associated with student recall of exposure to program services.**
- **Coordinator preparedness to teach tobacco use prevention lessons was also positively associated with student exposure to program services.**
- **The relationship between adult-reported school-level tobacco use prevention practices and policies and students' reported TUPE program exposure was inconsistent: some school-wide prevention activities and specific TUPE-program implementation measures were positively associated with student program exposure but several were not, or were not different between students in TUPE grantee vs. non-grantee schools.**
- **Students in grantee and non-grantee schools that sponsored school-wide tobacco use prevention activities were more likely to report finding TUPE information helpful, to report peer abstinence training and to report availability of tobacco use cessation classes. In TUPE-funded schools but not in other schools, such school-level sponsorship was associated with higher student-reported exposure to tobacco-related information and to refusal skills training.**
- **Support from the school district in the form of clearly expecting teachers to include TUPE lessons in their teaching was associated with higher likelihood of students having received tobacco-related information and reporting that they found such information useful.**
- **Students in TUPE-funded schools were more likely to receive training in specific content areas, such as why people smoke, youth smoking prevalence, the physical harmfulness of smoking and secondhand smoke.**
- **For many other comparisons there were few differences between grantee and non-grantee schools regarding how effective various TUPE program implementation measures were at reaching students.**

Introduction

Other chapters in this report have described the wide variety of policies and practices implemented in California schools that are intended to reduce student tobacco use. These practices include enforcement of no-tobacco-use-on-campus policies, delivery of tobacco use prevention curricula, sponsorship of school-wide prevention activities, involvement of parents and families in tobacco use prevention, and providing support for tobacco use cessation – to name just a few. These services are provided to students across all schools in the state, not just students in schools with TUPE funding. The purpose of this chapter is to examine how these policies and practices are related to students' reported exposure to program services, and to observed differences in program delivery in high schools that received competitive TUPE grants relative to those that did not receive such grants.

The analyses reported here illustrate how well different tobacco policies and practices in schools reach students, and help to gauge their potential for affecting student tobacco use outcomes and the precursors to use – a topic that is examined in more detail in Chapter 8.

For ease of interpretation, the analyses examined the numerous outcome measures as answered by respondents without attempting first to summarize those that were highly correlated. With so many statistical tests, however, it is likely that some of the "statistically significant" findings reported here were due to chance factors alone. The reader is therefore encouraged to be skeptical of isolated findings and to favor those findings that have been corroborated across multiple measures.

Analytic Strategy

To examine how school policies and practices are related to student program exposure, logistic or ordinary least squares regression models were used depending on whether or not the dependent variable was dichotomous or continuous. These regression models took the following general form:

$$Exposure_{ij} = \alpha_0 + \beta_1 * Practice_j + \beta_2 * Grade_{ij} + \beta_3 * Gender_{ij} + \beta_4 * Ethnic_{ij} + \varepsilon_{ij}, \quad [1]^{1}$$

Where Exposure represents student-reported exposure to specific program services for student i in school j, Practice represents the teacher/school administrator-reported tobacco use prevention activity in school j, Grade is a set of dichotomous "dummy" variables indicating a student's grade in school (seventh, eighth, etc.), Gender is a dichotomous variable indicating whether the student is female, and Ethnicity is a set of "dummy" dichotomous variables representing student racial/ethnic group membership (American Indian, Asian, African American, Latino, Pacific Islander, Caucasian). Of

[1] Equation [1] represents the case for when the dependent variable is continuous. For dichotomous tobacco outcomes (e.g., lifetime use), we estimate:
$\log(P_{ij}/1-P_{ij}) = \alpha_0 + \beta_1 * Practice_j + \beta_2 * Grade_{ij} + \beta_3 * Gender_{ij} + \beta_4 * Race/Ethnic_{ij}$.

particular interest is the coefficient β_1, which represents the association between a particular tobacco use prevention activity and student exposure to program services after controlling for grade, gender, and racial/ethnic composition across schools. This coefficient taps the effectiveness of teacher/administrator-reported tobacco policies and practices in reaching students as reflected in student-reported variation in exposure to specific program services.

The estimation procedures take into account sample weighting, clustering, and stratification. To obtain the standard errors of equation [1], the dependence among students within schools was adjusted for by using the Huber-Caucasian sandwich estimator of variance that relaxes the assumption of independence of observations (Huber, 1967, Kish and Frankel, 1974, Caucasian, 1980).[2]

Measures

Tobacco Use Policies and Practices

Tobacco use policies and practices at schools are measured based on responses from teachers, school coordinators, and school administrators. For the teacher reports, measures were calculated by averaging reports across TUPE-experienced teachers only, within each school. TUPE-experienced teachers were those who reported having taught TUPE lessons in the current school year or sometime during the previous school year. For the 66 schools with no TUPE-experienced teacher respondents, the mean responses were reported for all teachers. **Table 7.1** lists the tobacco policy and practice measures used in this chapter by source of report. The analysis focused on five broad areas of tobacco use prevention/intervention services, 1) no-tobacco-use-on-campus policies, 2) tobacco-related instruction, 3) school-wide anti-tobacco activities, 4) tobacco use cessation activities, and 5) governance. Appendix 7.1 shows the questionnaire items used to assess each measure.

Student Exposure to Program Services

The measures of student exposure to program services are identical to those used and discussed in Chapters 3 and 5. This chapter examines how teacher/administrator reported tobacco use policies and practices were related to student reports of receiving tobacco-related information, helpfulness of tobacco information received in making decisions about tobacco use, exposure to tobacco lessons, exposure to specific topics in relation to tobacco use, knowledge about school-wide anti-tobacco activities (e.g., guest speakers and assemblies), and knowledge about peer abstinence training and tobacco use cessation classes at school.

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[2] Because schools are the primary sampling units in CSTS and the estimation procedures take into account this complexity, the estimates, standard errors, and degrees of freedom for testing β_1 in **[1]** are virtually identical to those based on a multilevel model with a random intercept. Specialized multilevel modeling software (e.g., HLM) was not used in this report to estimate the association between school-level TUPE practices and student tobacco use outcomes because commercially available multilevel modeling software currently is unable to handle stratification.

Table 7.1 School-level Tobacco Use Policy and Practice Measures	Teacher	Coordinator	Administrator
Tobacco Policy			
Enforcement of no-use policy	√	√	
Consequences of violation	√	√	√
Tobacco-related Instruction			
Lessons taught	√	√	
Hours of instruction	√	√	
Infusion of tobacco lessons into other subjects	√	√	√
Published curriculum	√	√	
Topics covered	√	√	
Mode of delivery	√	√	
Training	√	√	
Barriers to teaching lessons	√	√	√
School-wide Anti-tobacco Activities			
Number of school-wide activities	√	√	√
Tobacco Use Cessation Activities			
Presence of tobacco use cessation services for students	√	√	
Referral of smokers to the California Smokers' Helpline	√	√	√
Parent involvement	√	√	√
Involvement of parents in TUPE activities	√	√	√
Governance			
Support from district	√	√	√
School-level and personal support	√	√	√

School Tobacco Policies and Practices to Student Exposure to Program Services

No-Tobacco-Use-on-Campus Policy

Enforcement of No-Tobacco-Use-on-Campus Policy

A large majority of teachers and school coordinators reported that the prohibition of tobacco use by students on school property was enforced a "great deal." However, the level of enforcement reported by teachers was unrelated to most measures of student exposure to program services. The 2001-2002 IETP Final Report reported that students were exposed to fewer program services in schools where TUPE school coordinators had reported high levels of punitive enforcement. These differences were not replicated in this most recent study. Overall, these results provide little support for the concept that exclusive attention paid to the enforcement of punitive no-tobacco-use policies could divert resources away from tobacco use prevention education.

Consequences for Students Who Violate No-Tobacco-Use-on-Campus Policy

It is debatable whether suspension, expulsion, or parent conferences are as effective in deterring tobacco use in the long-run as providing prevention and intervention services. To address this question, the analysis used teacher, school coordinator, and school administrator reports regarding the consequences for students who are caught smoking cigarettes on school premises. Responses are punitive (suspension/expulsion/parent conference) and/or supportive (referred to special class, referred to tobacco use

cessation program), and the association of punitive and/or supportive consequences to student exposure to program services was also examined. **Table 7.2** shows that teacher-rated supportive consequences were associated with increases in student exposure to teaching about the harmfulness of exposure to secondhand smoke (SHS) and to the provision of tobacco use cessation classes. **Table 7.2** shows a similar association between coordinator-rated supportive consequences and student-reported provision of tobacco use cessation programs but coordinator-rated supportive consequences were also positively associated with peer abstinence training. By contrast, teacher-rated punitive policies were associated with increased likelihood of students reporting refusal skills training and having been taught about youth smoking prevalence.

Coordinator-rated punitive policies were likewise associated with increased likelihood of students reporting refusal skills training. School administrator reports of supportive responses were weakly but positively related to student exposure to specific topics in the TUPE curriculum and strongly related to student reports of the provision of tobacco use cessation classes by their school. Interestingly, school administrators' judgments of their school's enforcement of tobacco-free policies were, if anything, inversely related to students' reports of exposure to two specific topics addressed in the TUPE lessons: harmfulness of tobacco smoking and harmfulness of exposure to SHS.

Overall, students in schools that relied more heavily on punitive policies to shape students' tobacco use behavior reported slightly higher likelihood that tobacco information in TUPE lessons was helpful, that they learned about smoking prevalence among youth, and that they received training in refusal skills. The only consistent effect on students of teacher, administrator and coordinator reports of schools relying more heavily on supportive policies to shape students' tobacco use behavior were student perceptions that their schools offered tobacco use cessation classes. This last finding was not too surprising, because teachers' perceptions of the school's supportiveness (as opposed to punitiveness) was defined, in part, by the teacher's report that the school provided tobacco use cessation classes to students found in violation of the school's smoke-free policy. However, teachers had a greater tendency to associate a school’s strong punitive policy against tobacco use with their perception that they had support from district administrators to teach TUPE lessons ($b = .018$, $t = 2.68$, $p < 0.01$).

Table 7.2 Relationship of Consequences of Violation of No-Tobacco-Use-on-Campus Policy to Student Reports of Exposure to Program Services

Student Reports of School's Program Services	Teacher OR*	Teacher 95% CI*	Coordinator OR	Coordinator 95% CI	Administrator OR	Administrator 95% CI
Punitive consequences						
Received information about tobacco at school	1.20	[0.90, 1.61]	1.04	[0.84, 1.29]	0.89	[0.74, 1.08]
Tobacco information helpful	1.15	[0.87, 1.50]	1.13	[0.93, 1.38]	0.93	[0.78, 1.11]
Tobacco lessons	1.27	[0.92, 1.76]	1.00	[0.80, 1.25]	0.83	[0.66, 1.05]
Taught about why people smoke	1.12	[0.90,1.39]	1.12	[0.93, 1.35]	0.92	[0.76, 1.11]
Taught about smoking prevalence	1.33	[1.03, 1.71]	1.12	[0.92, 1.36]	0.90	[0.73, 1.12]
Taught about physical harm from smoking	1.21	[0.91, 1.62]	0.99	[0.70, 1.37]	0.78	[0.64, 0.94]
Taught about SHS	1.27	[0.99, 1.63]	0.94	[0.82, 1.09]	0.83	[0.71, 0.96]
Refusal skills training	1.47	[1.04, 2.08]	1.43	[1.11, 1.84]	0.95	[0.67, 1.35]
Guest speaker	1.23	[0.88, 1.72]	1.03	[0.82, 1.30]	0.88	[0.68, 1.13]
Assembly about tobacco use	1.25	[0.90, 1.74]	1.19	[0.90, 1.59]	0.94	[0.71, 1.24]
Peer abstinence training	0.95	[0.83, 1.08]	1.02	[0.88, 1.18]	1.00	[0.86, 1.17]
Student-reported tobacco use cessation classes	1.06	[0.66, 1.68]	0.87	[0.60, 1.28]	1.00	[0.64, 1.57]
Supportive consequence						
Received information about tobacco at school	1.07	[0.84, 1.35]	1.09	[0.86, 1.39]	1.08	[0.87, 1.34]
Tobacco information helpful	1.04	[0.83, 1.30]	1.17	[0.93, 1.48]	1.20	[0.99. 1.47]
Tobacco lessons	1.08	[0.86, 1.35]	1.21	[0.93, 1.58]	1.26	[1.00, 1.58]
Taught about why people smoke	1.20	[0.91, 1.57]	1.14	[0.95, 1.36]	1.22	[1.02, 1.45]
Taught about smoking prevalence	1.04	[0.76, 1.43]	1.03	[0.83, 1.27]	1.12	[0.91, 1.36]
Taught about physical harm from smoking	1.13	[0.92, 1.40]	1.13	[0.90, 1.43]	1.19	[0.95, 1.50]
Taught about SHS	1.22	[1.01, 1.49]	1.19	[0.98, 1.44]	1.24	[1.01, 1.54]
Refusal skills training	0.96	[0.57, 1.61]	0.79	[0.58, 1.06]	1.04	[0.78, 1.40]
Guest speaker	0.99	[0.77, 1.27]	1.13	[0.86, 1.48]	1.19	[0.93, 1.53]
Assembly about tobacco use	1.06	[0.69, 1.64]	1.08	[0.83, 1.40]	0.96	[0.79, 1.17]

Table 7.2 (cont.) Relationship of Consequences of Violation of No-Tobacco-Use-on-Campus Policy to Student Reports of Exposure to Program Services

Student Reports of School's Program Services	Teacher OR*	Teacher 95% CI*	Coordinator OR	Coordinator 95% CI	Administrator OR	Administrator 95% CI
(Supportive consequence)						
Peer abstinence training	1.17	[0.94, 1.44]	1.23	[1.11, 1.36]	1.13	[0.98, 1.29]
Student-reported tobacco use cessation classes	3.39	[2.02, 5.70]	2.96	[2.07, 4.23]	1.67	[1.02, 2.73]

* OR is odds ratio and CI is confidence interval. If CI includes one, the estimated OR is not significantly different from one.
** Responses were categorized as punitive (suspension/expulsion/parent conference are teacher / coordinator perceived consequences of violating school smoke-free policy) and supportive (referred to special class, referred to tobacco use cessation program are teacher/ coordinator perceived consequences of violating school smoke-free policy)
*** Results come from models that control for student gender, ethnicity, and grade level.

Anti-Tobacco Instruction

Tobacco Lessons and Hours of Instruction

The next analyzed relationship was the level of tobacco instruction in association with student exposure to tobacco-related information (including "received information about tobacco at school," "tobacco information helpful," "tobacco lessons," "taught about why people smoke," "taught about physical harm from smoking," "taught about SHS," and "refusal skills training"). As seen in **Tables 7.3** and **7.4**, teacher reports of providing tobacco use prevention lessons and hours of tobacco instruction were positively related to student reports of exposure to tobacco-related information. In addition, coordinator reports of lessons were positively associated with student reports of exposure to lessons. What was also apparent from the results was that tobacco use prevention lessons as reported by teachers were positively related to students' perceived usefulness of lesson content (this was not confirmed by site administrator or site coordinator reports) and positively related to student reports of exposure to major components of TUPE lessons, especially refusal skills training. These relationships for teachers are presented graphically in **Figure 7.1**. These results suggest that saturation of tobacco-related education was not only associated with the delivery of more content, but also with the delivery of better quality, more useful tobacco use prevention information to students. Teachers' reported hours spent on TUPE lessons were positively related to students' perceived usefulness of tobacco lessons as well as to various topics covered (**Table 7.4**). Teachers reported a mean of 4.4 hours (95% CI: 4.3 – 4.5) of TUPE lessons taught in the previous year when students reported finding the TUPE information helpful compared to a teacher-reported mean of 3.7 hours (95% CI: 3.6 – 3.8) when students reported finding the TUPE information unhelpful. The number of hours that school coordinators reported spending on TUPE lessons was less consistently related to student reports of TUPE information learned.

Table 7.3 Relationship of Tobacco Use Prevention Instruction Lessons to Student Reports of Exposure to Program Services

Student Reports of Exposure to School's Program Services	Taught Tobacco Use Prevention Lessons			
	Teacher		School Coordinator	
	OR*	95% CI*	OR	95% CI
Received information about tobacco at school	1.51	[1.11, 2.03]	1.13	[0.90, 1.42]
Tobacco information helpful	1.59	[1.17, 2.17]	1.09	[0.88, 1.35]
Tobacco lessons	1.51	[1.02, 2.25]	1.17	[0.90, 1.52]
Taught about why people smoke	1.51	[1.05, 2.16]	1.27	[1.03, 1.55]
Taught about smoking prevalence	1.39	[1.03, 1.87]	1.28	[1.02, 1.60]
Taught about physical harm from smoking	1.37	[1.05, 1.77]	1.20	[0.96, 1.49]
Taught about SHS	1.36	[1.00, 1.84]	1.21	[1.02, 1.45]
Refusal skills training	1.66	[1.10, 2.49]	1.34	[0.97, 1.84]

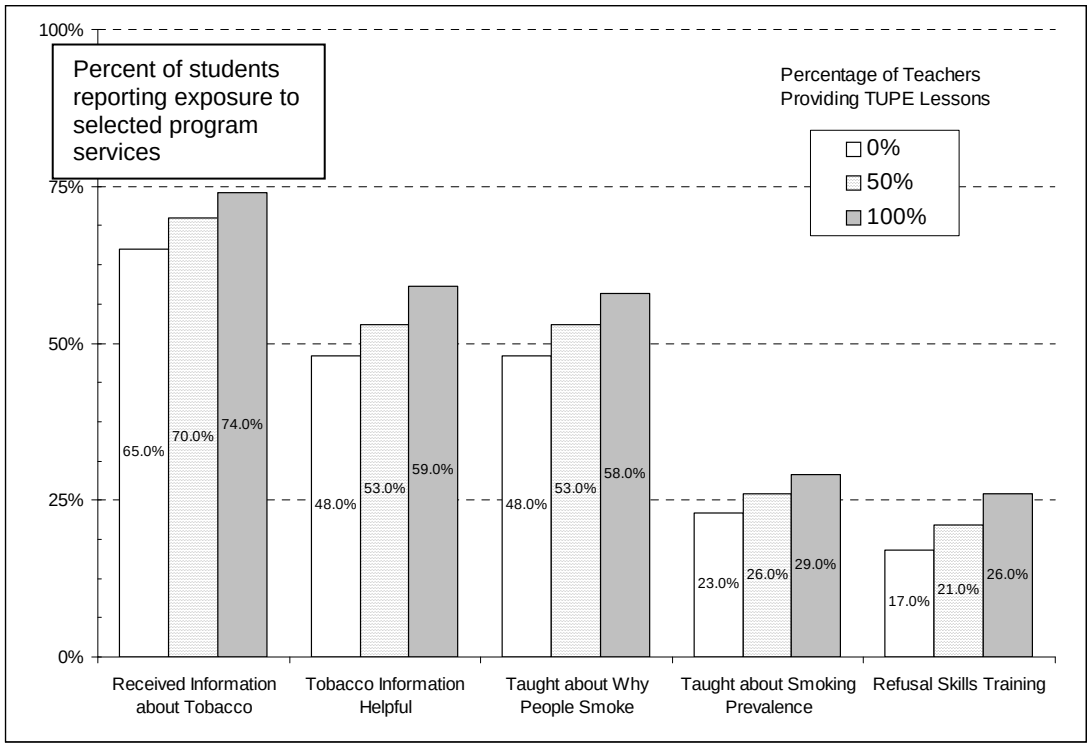
* OR is odds ratio and CI is confidence interval. If CI includes one, the estimated OR is not significantly different from one.
** Results come from models that control for student gender, ethnicity, and grade level.

Table 7.4 Relationship of Hours of Tobacco Use Prevention Instruction to Student Reports of Exposure to Services

Student Reports of Exposure to School's Program Services	Hours of Instruction			
	Teacher		School Coordinator	
	OR*	95% CI*	OR	95% CI
Received information about tobacco at school	1.03	[1.00, 1.06]	1.00	[1.00, 1.01]
Tobacco information helpful	1.03	[1.01, 1.05]	1.00	[1.00, 1.01]
Tobacco lessons	1.03	[1.00, 1.05]	1.00	[1.00, 1.01]
Taught about why people smoke	1.03	[0.99, 1.07]	1.00	[1.00, 1.01]
Taught about smoking prevalence	1.03	[1.00, 1.05]	1.00	[0.99, 1.00]
Taught about physical harm from smoking	1.02	[1.00, 1.04]	1.00	[1.00, 1.01]
Taught about SHS	1.02	[1.00, 1.04]	1.00	[1.00, 1.01]
Refusal skills training	1.04	[1.02, 1.07]	1.00	[0.99, 1.00]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Figure 7.1 Tobacco Instruction and Student Exposure to Program Services



Infusion of Tobacco Use Prevention Curriculum in Other Subjects

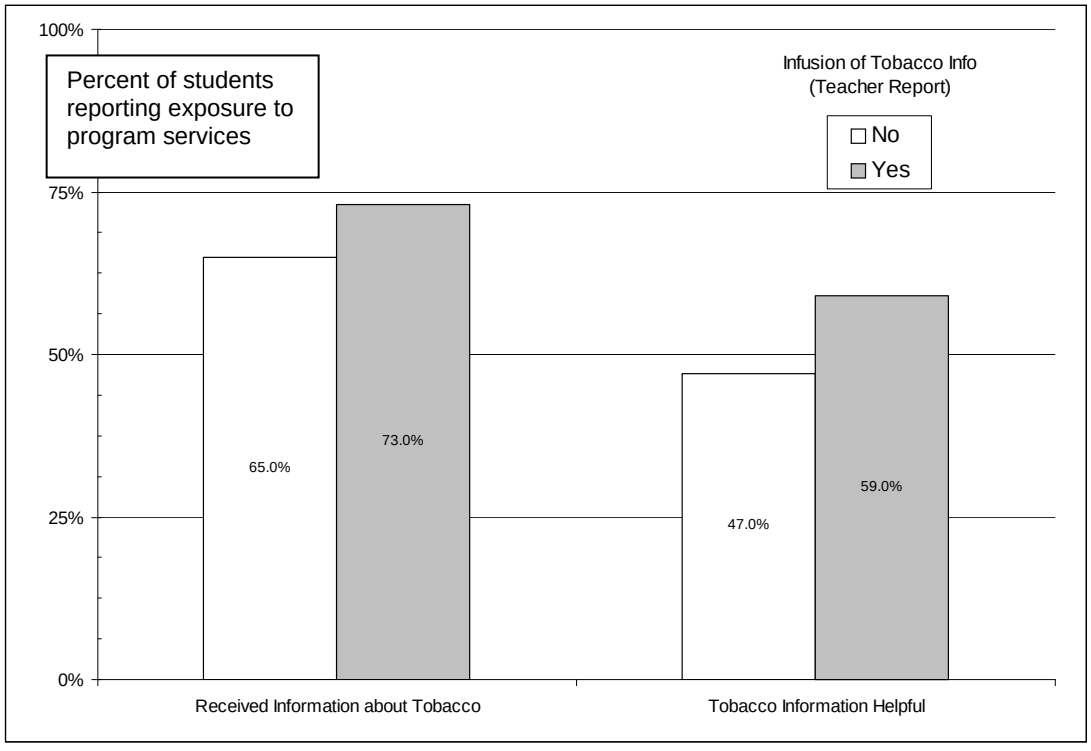
One might expect that when teachers routinely integrate tobacco-related information into their usual non-health related lessons, students will be more likely to retain tobacco-related knowledge. Partial support was found for this expectation when infusion was examined relative to student exposure to lessons and lesson content. As shown in **Table 7.5** and **Figure 7.2**, teacher reports of infusion were associated with increased likelihood that students would report that TUPE information was helpful. In addition, students were more likely to report that they were taught about the reasons why people smoke, smoking prevalence, and physical harm from smoking. Lastly, these students had an increased likelihood of receiving refusal skills training. School administrator reports of tobacco lesson infusion – which were measured by the reported number of non health-related subject areas that included tobacco lessons – were unrelated to student exposure to lessons and lesson content (not shown).

Table 7.5 Relationship of Tobacco Infusion to Student Reports of Exposure to Services, Based on Teacher's Report

Student Reports of Exposure of School's Program Services	OR*	95% CI*
Received information about tobacco at school	1.43	[0.98, 2.09]
Tobacco information helpful	1.63	[1.12, 2.36]
Tobacco lessons	1.52	[0.98, 2.37]
Taught about why people smoke	1.43	[1.01, 2.02]
Taught about smoking prevalence	1.48	[1.03, 2.11]
Taught about physical harm from smoking	1.43	[1.03, 1.98]
Taught about SHS	1.31	[0.94, 1.84]
Refusal skills training	1.71	[1.02, 2.88]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Figure 7.2 Tobacco Infusion and Student Exposure to Program Services



Use of Published vs. Non-published Tobacco Curriculum

On average, use of a consensus model tobacco curriculum, that is, a tobacco curriculum approved for use by the Centers for Disease Control and Prevention (CDC) or approved by the California Department of Education (CDE), may help ensure that students are exposed to a broader array of tobacco-related topics than use of a nonstandard, locally developed curriculum. Among teachers who taught TUPE lessons in the previous year, only 3.5 percent (95% CI: 1.1, 10.7) reported using a CDC-endorsed curriculum and only 16.0 percent (95% CI: 11.3, 22.2) reported using a CDE-approved curriculum. The respondent most likely to accurately report the nature of the TUPE curriculum used at each school was the school TUPE coordinator. Nearly half (48.1%, 95% CI: 37.6 – 58.5) reported using a TUPE curriculum approved by CDE and 16.0% (95% CI: 9.6 – 25.3) reported using a TUPE curriculum recommended by CDC. Analyses involving only CDE-approved curricula showed no differences between schools using CDE-approved curricula and schools not using CDE-approved curricula on a variety of student outcomes. The results described below therefore are specific to analyses involving any established curriculum, whether approved or not approved.

The extent to which breadth vs. depth of curriculum content is more effective in reducing student tobacco use is unknown. The results in **Table 7.6** suggest that use of a published tobacco curriculum (any established curriculum, whether approved or not approved) was marginally associated only with student reports of refusal skills training. The use of unpublished TUPE curricula, on the other hand, was more strongly associated with the helpfulness of tobacco information, as well as being positively associated with refusal skills training. These results differed from those reported in the previous IETP evaluation report – where the use of a published curriculum (teacher reports) was found to have more pronounced effects on student exposure to lessons and lesson content than the use of an unpublished curriculum.

Tobacco Use Prevention Topics Covered and Mode of Delivery

The teacher and school coordinator surveys asked about the topics covered in tobacco use prevention lessons. These topics included such subjects as the effects of tobacco on health, smoking prevalence, behavioral skills for resisting tobacco offers, and tobacco advertising and marketing. Both teacher and coordinator reports of tobacco use prevention topics were strongly and consistently related to student exposure to tobacco lessons and specific lesson content. Teacher-reported tobacco topics were consistently related to student perceptions of the usefulness of tobacco-related information learned in school. Coordinator reports were less consistently related to perceptions of usefulness – although coordinator reports of covering resistance training skills and cigar use were marginally associated with students' greater perceived usefulness of tobacco information ($p < 0.10$).

Table 7.6 Curriculum Used by Teacher and Student Reports of Exposure to Program Services

Student Reports of Exposure to School's Program Services	Published		Unpublished	
	OR*	95% CI*	OR	95% CI
Received information about tobacco at school	1.26	[0.83, 1.90]	1.60	[1.02, 2.49]
Tobacco information helpful	1.23	[0.81, 1.88]	1.65	[1.13, 2.41]
Tobacco lessons	1.20	[0.78, 1.83]	1.50	[0.90, 2.48]
Taught about why people smoke	1.36	[0.87, 2.14]	1.31	[0.85, 2.02]
Taught about smoking prevalence	1.35	[0.92, 2.00]	1.38	[0.97, 1.94]
Taught about physical harm from smoking	1.16	[0.82, 1.65]	1.40	[0.93, 2.09]
Taught about SHS	1.23	[0.88, 1.73]	1.24	[0.84, 1.82]
Refusal skills training	1.67	[0.99, 2.84]	1.59	[1.09, 2.32]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

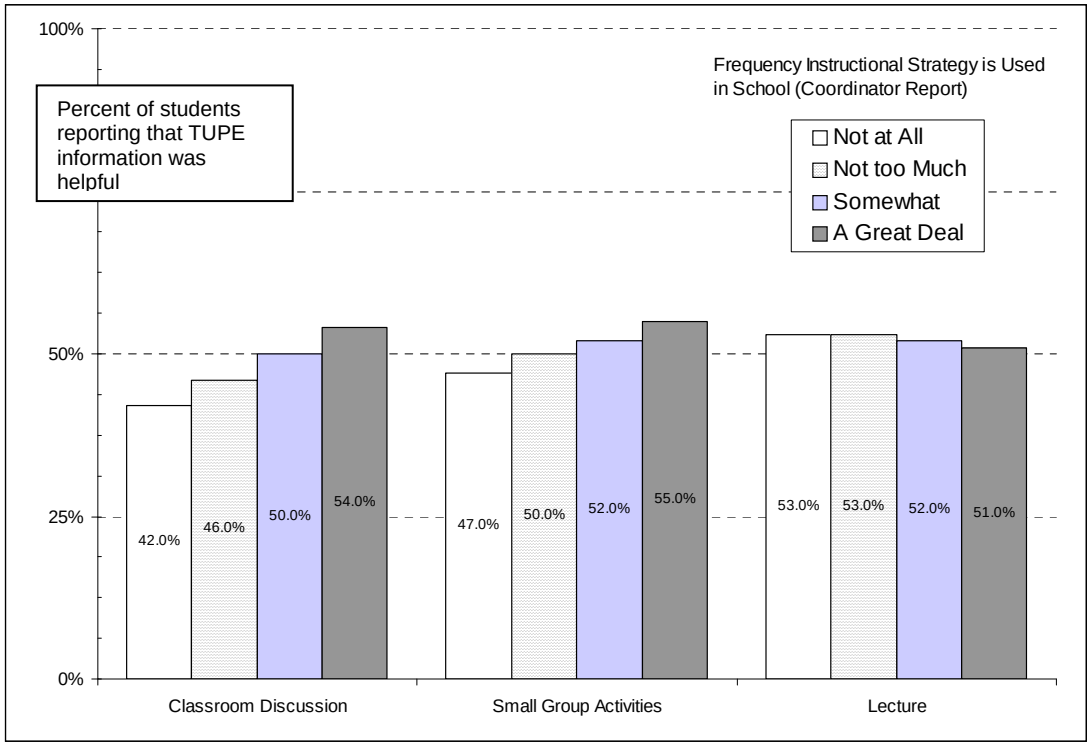
The methods of delivery of program lessons were also analyzed in association with student exposure to lessons and lesson content. Methods of delivery included traditional lectures, class discussions, and non-traditional methods such as small group activities, student worksheets, and role-playing. For teacher reports about their own tobacco use prevention instructional techniques, in no case was a particular method of instruction found to be associated with student reports of exposure to lessons and lesson content. School coordinators were asked to report the frequency with which different instructional methods were used in their schools. As shown in **Table 7.7**, school coordinator reports of the use of classroom discussions and small group activities were associated with greater student recall of having received tobacco information, recall of the perceived usefulness of tobacco information, and recall of tobacco lessons and lesson content. The use of lectures was not associated with student exposure to tobacco information, lessons, or lesson content. The relationship between instructional modalities and usefulness of tobacco information received is displayed graphically in **Figure 7.3**.

Table 7.7 Relationship of Tobacco Use Prevention Instructional Methods to Student Reports of Exposure to Services, based on school coordinator's report

Student Reports of Exposure to School's Program Services	Classroom Discussion		Small Group Activities		Lecture		Media Literacy	
	OR*	95% CI*	OR	95% CI	OR	95% CI	OR	95% CI
Received information about tobacco at school	1.32	[1.07, 1.63]	1.37	[1.10, 1.70]	0.79	[0.65, 0.97]	0.95	[0.75, 1.20]
Tobacco information helpful	1.29	[1.08, 1.54]	1.31	[1.08, 1.59]	0.85	[0.71, 1.03]	1.02	[0.82, 1.26]
Tobacco lessons	1.36	[1.11, 1.66]	1.33	[1.03, 1.72]	0.85	[0.64, 1.13]	1.14	[0.87, 1.49]
Taught about why people Smoke	1.30	[1.10, 1.54]	1.19	[0.95, 1.49]	0.96	[0.77, 1.20]	1.13	[0.89, 1.44]
Taught about smoking Prevalence	1.38	[1.15, 1.66]	1.28	[1.02, 1.61]	0.92	[0.72, 1.19]	0.99	[0.77, 1.26]
Taught about physical harm from smoking	1.37	[1.11, 1.69]	1.28	[1.00, 1.64]	0.82	[0.65, 1.05]	1.13	[0.92, 1.40]
Taught about SHS	1.39	[1.17, 1.64]	1.16	[0.95, 1.41]	0.85	[0.68, 1.08]	1.15	[0.94, 1.40]
Refusal skills training	1.34	[0.98, 1.82]	1.53	[1.05, 2.24]	0.86	[0.62, 1.20]	0.83	[0.65, 1.07]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Figure 7.3 Tobacco Instructional Modality and Students' Perceived Helpfulness of Tobacco Information



Tobacco-Related Instructional Training and Preparedness

Two indicators of teacher/coordinator training in tobacco education were used to examine how training was related to student exposure to tobacco-related information, lessons, and lesson content: the receipt of in-service training on tobacco use prevention education and the level of preparedness for teaching tobacco use prevention lessons. The results presented in **Table 7.8** show that variations in teacher and coordinator TUPE training appeared to be unrelated to student reports of exposure to tobacco lessons or lesson content. However, coordinator preparedness (but not teacher preparedness) was consistently and positively associated with student-reported exposure to various indices of TUPE content. Similar associations with teachers' reports of their level of preparedness to teach tobacco lessons were consistently positive but were statistically weak or non-significant, in contrast to the corresponding associations reported in the previous IETP Final Report.

Table 7.8 Relationship of Tobacco Use Prevention Training and Preparation to Teaching to Student Reports of Exposure to Services

Student Reports of Exposure of School's Program Services	Training				Level of Preparedness			
	Teacher		School Coordinator		Teacher		School Coordinator	
	OR*	95% CI*	OR	95% CI	OR	95% CI	OR	95% CI
Received information about tobacco at school	1.18	[0.75, 1.86]	1.04	[0.85, 1.28]	1.21	[0.74, 1.98]	1.43	[1.08, 1.90]
Tobacco information helpful	1.04	[0.65, 1.65]	1.07	[0.89, 1.28]	1.19	[0.73, 1.93]	1.40	[1.08, 1.83]
Tobacco lessons	1.27	[0.68, 2.40]	1.13	[0.93, 1.37]	1.21	[0.67, 2.20]	1.59	[1.17, 2.17]
Taught about why people smoke	0.93	[0.60, 1.46]	1.12	[0.92, 1.35]	1.18	[0.69, 2.04]	1.37	[1.07, 1.76]
Taught about smoking prevalence	1.31	[0.69, 2.51]	1.04	[0.84, 1.30]	1.60	[0.93, 2.75]	1.43	[1.13, 1.80]
Taught about physical harm from smoking	1.31	[0.73, 2.36]	0.98	[0.81, 1.19]	1.28	[0.76, 2.14]	1.46	[1.07, 1.98]
Taught about SHS	1.23	[0.71, 2.13]	1.08	[0.92. 1.26]	1.48	[0.94, 2.34]	1.53	[1.17, 1.99]
Refusal skills training	1.69	[0.79, 3.58]	0.98	[0.71, 1.37]	2.22	[1.14, 4.31]	1.37	[0.96, 1.97]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Barriers to Teaching Tobacco Lessons

Teachers, school coordinators, and school administrators were asked to indicate what they perceived to be the barriers to teaching tobacco use prevention lessons in their school. Perceived barriers were studied in relation to three student outcome variables: 1) the receipt of tobacco use-related information at school, 2) the usefulness of tobacco-use related information received, and 3) whether or not the student was exposed to tobacco use prevention lessons. **Table 7.9** shows how perceived barriers are related to each of these student program outcomes. In general, the results indicated that greater barriers to teaching tobacco use prevention were associated with reduced student exposure to tobacco information and tobacco lessons, although the results varied considerably depending on the type of barrier, the reporter (teacher vs. coordinator vs. administrator), and the outcome assessed. Students were less likely to report that they received tobacco-related information in schools where teachers reported that tobacco education was not mandated (OR = 0.57; 95% CI: 0.34 – 0.96), or

materials were inadequate (OR = 0.59; 95% CI: 0.37 – 0.93). These same barriers were related to the student reports of rated helpfulness of TUPE lessons [(OR = 0.66; 95% CI: 0.41 – 1.05) for “Not mandated”, (OR = 0.67; 95% CI: 0.41 – 1.08) for “Lack of materials”] and to lower student-reported exposure to tobacco lessons [(OR = 0.46; 95% CI: 0.25 – 0.85 for “Not mandated”, (OR = 0.41; 95% CI: 0.22 – 0.75) for “Lack of materials”].

Coordinator-reported barriers were more consistently related to student program outcomes compared to teacher-reported barriers. Students in schools in which the coordinator stated that tobacco use prevention was a low priority for the school or the district reported less exposure to TUPE information (OR = 0.51; 95% CI: 0.37 – 0.71), less exposure to tobacco lessons (OR = 0.60; 95% CI: 0.45 – 0.79) and decreased perceived usefulness of TUPE information (OR = 0.65; 95% CI: 0.50 – 0.83) compared to students in other schools.

Teacher and coordinator reported barriers were significantly related to student reports of the usefulness of tobacco-related information received. Students were less likely to report that the information they received about tobacco use at school was useful in schools where administrators reported that tobacco education was not a school or district priority.

Overall, the evidence consistently indicated that barriers to implementing TUPE services at the school, particularly barriers identified by the site coordinator of TUPE activities, were associated with reduced likelihood of students reporting having received tobacco use prevention and with reduced likelihood of students reporting that the TUPE information they did receive was helpful. The teaching modality used to disseminate TUPE information mattered, according to site coordinator reports. More interactive lessons, such as small group activities and group discussions, were associated with an increased likelihood that students would remember receiving refusal skills training, would report the TUPE information they received as being helpful, and would recall having been exposed to such topics as SHS, the prevalence of smoking, and health consequences of smoking.

Table 7.9 Barriers to Teaching Prevention Lessons in relation to Student Reports of Exposure to Services

Barriers	Teacher		Coordinator		Administrator	
	OR*	95% CI*	OR	95% CI	OR	95% CI
1. Student reported that they received information						
Not part of curriculum	0.81	[0.47, 1.42]	0.74	[0.49, 1.11]	0.81	[0.61, 1.08]
Not mandated	0.57	[0.34, 0.96]	0.63	[0.40, 0.99]	0.71	[0.43, 1.17]
Outcomes not assessed	1.02	[0.74, 1.40]	0.93	[0.66, 1.32]	0.81	[0.64, 1.03]
Lack of materials	0.59	[0.37, 0.93]	0.83	[0.62, 1.12]	1.58	[1.00, 2.51]
Lack of time	0.93	[0.70, 1.25]	0.82	[0.63, 1.06]	0.91	[0.73, 1.14]
Low district priority	0.93	[0.44, 1.96]	0.69	[0.49, 0.97]	0.79	[0.63, 0.99]
Low school priority	0.96	[0.59, 1.56]	0.6	[0.45, 0.79]	0.66	[0.48, 0.90]
Lack of training	0.79	[0.47, 1.33]	0.73	[0.48, 1.11]	0.84	[0.50, 1.41]
All barriers	0.92	[0.84, 1.02]	0.9	[0.84, 0.97]	0.92	[0.85, 1.00]
2. Student reported that information received was helpful						
Not part of curriculum	0.92	[0.60, 1.42]	0.79	[0.56, 1.13]	0.81	[0.63, 1.03]
Not mandated	0.66	[0.41, 1.05]	0.66	[0.42, 1.05]	0.72	[0.46, 1.12]
Outcomes not assessed	0.83	[0.55, 1.25]	0.88	[0.65, 1.19]	0.81	[0.66, 1.00]
Lack of materials	0.67	[0.41,1.08]	0.9	[0.68, 1.18]	1.39	[0.94, 2.05]
Lack of time	0.85	[0.58, 1.23]	0.83	[0.65, 1.05]	0.91	[0.74, 1.12]
Low district priority	1.57	[0.76, 3.26]	0.76	[0.54, 1.07]	0.82	[0.67, 0.99]
Low school priority	1.38	[0.81, 2.36]	0.65	[0.50, 0.83]	0.71	[0.52, 0.95]
Lack of training	0.62	[0.32, 1.18]	0.75	[0.55, 1.03]	0.86	[0.55, 1.36]
All barriers	0.94	[0.85, 1.04]	0.93	[0.87, 1.00]	0.94	[0.87, 1.02]
3. Student reported exposure to tobacco use prevention lessons						
Not part of curriculum	0.99	[0.59, 1.69]	0.72	[0.44, 1.17]	0.75	[0.49, 1.14]
Not mandated	0.46	[0.25, 0.85]	0.54	[0.32, 0.92]	0.67	[0.35, 1.27]
Outcomes not assessed	0.78	[0.52, 1.15]	0.84	[0.60, 1.18]	0.73	[0.54, 0.97]
Lack of materials	0.41	[0.22, 0.75]	0.75	[0.55, 1.01]	1.42	[0.81, 2.49]
Lack of time	0.72	[0.47, 1.08]	0.79	[0.61, 1.03]	0.92	[0.70, 1.20]
Low district priority	0.78	[0.31, 1.95]	0.64	[0.45, 0.93]	0.8	[0.62, 1.04]
Low school priority	0.86	[0.49, 1.50]	0.51	[0.37, 0.71]	0.6	[0.42, 0.86]
Lack of training	0.48*	[0.23, 1.02]	0.57	[0.34, 0.95]	0.77	[0.42, 1.41]
All barriers	0.86	[0.77, 0.97]	0.88	[0.81, 0.96]	0.91	[0.83, 1.01]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

School-Wide Anti Tobacco Activities

Number of School-Wide Activities

Teachers, coordinators, and administrators were asked about eight school-wide, tobacco use prevention activities (e.g., Great American Smoke-out, anti-tobacco club) that took place at their school during the school year prior to the survey. **Table 7.10** indicates that the total count of these activities was related to students' receipt of tobacco-related information and perceived usefulness of this information. The results suggested that students reported higher levels of receipt of tobacco-related information and higher usefulness of this information when they attended schools that sponsored a greater number of school-wide tobacco education activities. School-wide tobacco-related activities also showed significant positive associations with tobacco lessons, each measure of lesson content, and tobacco use cessation classes (not shown), suggesting that these outcomes should not be evaluated in isolation.

Table 7.10 Relationship of School Activities to Student Reports of Exposure to Services

School wide activities	Received Information		Information helpful	
	OR*	95% CI*	OR	95% CI
Teacher	1.16	[1.07, 1.26]	1.13	[1.06, 1.21]
School coordinator	1.02	[0.99, 1.06]	1.03	[1.00, 1.07]
School administrator	1.01	[0.97, 1.05]	1.03	[0.99, 1.07]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Tobacco Use Cessation Activities

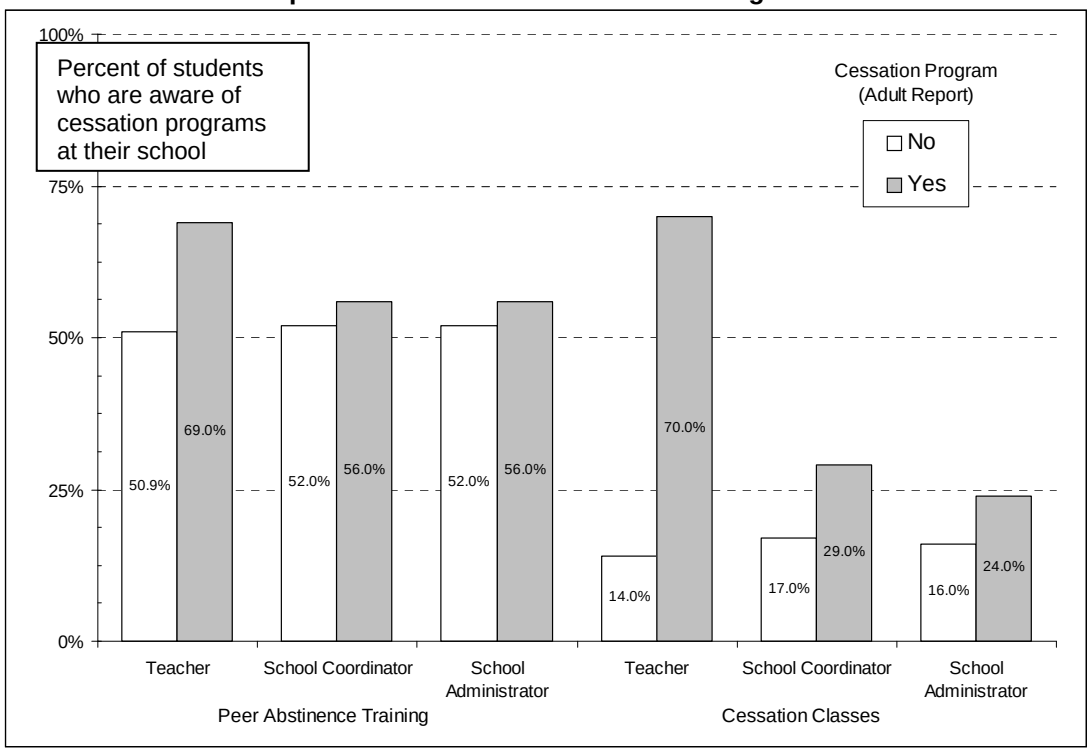
As expected, teacher, coordinator, and administrator reports of the presence of special programs for students who wanted help quitting their smoking habit were positively related to student reports of the presence of peer abstinence training and tobacco use cessation classes. The relationships are shown in **Table 7.11** and **Figure 7.4**.

Table 7.11 Relationship of Tobacco Use Cessation Activities to Student Awareness of Tobacco Use Cessation Services

Tobacco Use Cessation Program	Peer Abstinence Training		Tobacco Use Cessation Classes	
	OR*	95% CI*	OR	95% CI
Teacher	2.13	[1.62, 2.81]	14.71	[6.58, 32.87]
School coordinator	1.15	[1.00, 1.31]	1.97	[1.28, 3.03]
School administrator	1.26	[1.10, 1.45]	2.54	[1.57, 4.08]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Figure 7.4 Student Awareness of Tobacco Use Cessation Services by Teacher, Coordinator, and Administrator Reports of Tobacco Use Cessation Program



Governance

Tobacco Use Prevention/Intervention Resources and Support from the School District
The first two panels in **Table 7.12** show how perceived changes in prevention/intervention resources and support from the school district are related to students' receipt of tobacco-related information and their satisfaction with the perceived usefulness of this information in making decisions about tobacco use. In schools where teachers reported that they were currently receiving more tobacco-related resources than the previous year, students received tobacco-related information at school more frequently than students in other schools. Teachers' perceived increases in resources were also positively related to student reports of tobacco lessons, various specific topics usually found in TUPE lessons, and tobacco use cessation classes (not shown). Teacher reports of increases in resources were related to greater student exposure to program resources, however, parallel findings were less evident for coordinator reports. In contrast, coordinator reports of decreases in TUPE funding were strongly related to decreases in students' program exposure across a variety of areas, including reduced student reports of TUPE information received, reports that the TUPE information received was less helpful, fewer TUPE lessons, less exposure to messages about the physical harm of smoking and about the harmfulness of SHS, and lower likelihood of attending an assembly about tobacco use.

Table 7.12 Relationship of School Activities, Tobacco Use Prevention/Intervention Resources, and Support from District to Student Reports of Exposure to Services

	Received Information		Information helpful	
	OR*	95% CI*	OR	95% CI
Increases in TUPE Resources				
Teacher	1.66	[1.23, 2.24]	1.30	[0.92, 1.83]
Site coordinator	1.22	[0.97, 1.53]	0.99	[0.78, 1.26]
Decreases in TUPE Resources				
Site coordinator	0.69	[0.54, 0.87]	0.78	[0.63, 0.98]
Support from district				
Teacher				
District expects teachers to offer TUPE lessons	1.35	[0.94, 1.94]	1.36	[1.00, 1.84]
District supports TUPE program	1.57	[1.10, 2.22]	1.52	[1.13, 2.06]
Site coordinator				
District expects teachers to offer TUPE lessons	1.06	[0.80, 1.40]	1.00	[0.79, 1.26]
District supports TUPE program	1.32	[1.00, 1.74]	1.22	[0.94, 1.58]
Site administrator				
District supports TUPE program	1.17	[0.91, 1.50]	1.17	[0.95, 1.44]
Priority of Tobacco Education at School				
Teacher	1.33	[1.12, 1.58]	1.17	[0.94, 1.44]
Tobacco education is a valuable use of student time				
Site administrator	0.94	[0.73, 1.20]	0.99	[0.78, 1.26]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Table 7.12 also shows how district support for tobacco use prevention was related to students' receipt of tobacco-related information and to their perceived usefulness of that information. Teacher, but not coordinator reports, demonstrated that when district administrators expected tobacco lessons to be taught and were perceived to offer strong support for tobacco lessons, students more frequently reported that they had received tobacco-related information (OR = 1.35, 95% CI: 0.94 – 1.94) and that this information was useful (OR = 1.57, 95% CI: 1.10 – 2.22). Coordinator reports of district support were also positively associated with student receipt of tobacco information (OR = 1.32, 95% CI: 1.00 – 1.74). This suggests that better quality, more useful, tobacco-related information is provided to students when district administrators make clear to teachers that they expect tobacco lessons to be taught and are perceived to actively support such teaching.

Table 7.12 also shows that teacher perceptions of the priority of the TUPE program at the school were positively related to students' perceived receipt of tobacco information (OR = 1.33, 95% CI: 1.12 – 1.58). Teacher reports of program priority were not significantly related to students' perceived usefulness of tobacco-related information. In contrast to teacher reports, the results for site administrators in Table 7.12 show that their personal opinion about the value of tobacco use prevention education for students was not significantly related to student reports of receipt of TUPE information. In sum, when teachers perceived strong support by the district for the school's TUPE program, students were more likely to report having been exposed to TUPE information and having found the TUPE information to be helpful. Student reports of exposure to TUPE information and ratings of the helpfulness of the TUPE information were unrelated to site administrator perceptions of district support for TUPE.

School Tobacco Policies and Practices and Student Exposure to Program Services: Differences across High Schools with Competitive TUPE Grants

This section briefly describes differences between high schools with competitive TUPE grants and those without such grants in the relationships of policies and practices to student exposure to program services. That is, grantee/non-grantee differences are examined in the effectiveness of program implementation in reaching students. Interaction effects are estimated between grantee status and each of the tobacco policy/practice variables described above. Overall, only a few significant and consistent differences were found across grantee and non-grantee schools.

No-Tobacco-Use-on-Campus Policy

Enforcement of No-Tobacco-Use-on-Campus Policy
There were few differences between grantee high schools and non-grantee high schools regarding associations between the level of enforcement of no-tobacco-use-on-campus policies and student reports of exposure to TUPE program services.

Consequences for Students who Violate the No Tobacco-Use-on-Campus Policy
Suspension/expulsion policies for violation of the no-tobacco-use-on-campus policy were negatively associated with student reports of exposure to TUPE content about the physical harm caused by smoking and about the negative health consequences of exposure to SHS in non-grantee schools. These associations were weaker in schools with TUPE funding and were not significant. **Table 7.13** shows that, in non-grantee schools, suspension/expulsion policies were negatively associated with student reports of receiving information about the physical harm associated with smoking and information about the negative health consequences of exposure to SHS. In grantee schools, all associations with suspension/expulsion policies were negative but not significant. Overall, these results suggest that the presence of punitive policies for violations of the school's smoke-free policy were associated with a significantly reduced likelihood of exposure to tobacco lesson content among students in non-grantee schools, but this inverse relationship was not significant in analyses involving grantee schools. It appears that schools offset a lack of TUPE lessons with more punitive

policies as a strategy to discourage student tobacco use. This balancing of punitive sanction vs. TUPE lessons was most evident in non-grantee schools and less evident in grantee schools presumably because TUPE grants require TUPE lessons in the grantee schools, regardless of the punitiveness of the consequences of being found violating the school's smoke-free policy.

Table 7.13 Consequences of Violation of No-Tobacco-Use-on-Campus Policy and Student Reports of Exposure to Program Services in grantee and non-grantee High Schools

Outcome Variable	Suspensions/Expulsion (Administration)			
	Non-Grantee		Grantee	
	OR*	95% CI*	OR	95% CI
Received information about Tobacco at school	0.82	[0.57, 1.16]	0.97	[0.79, 1.20]
Tobacco information helpful	0.84	[0.62, 1.14]	0.80	[0.64, 1.01]
Tobacco lessons	0.71	[0.49, 1.03]	0.85	[0.68, 1.06]
Taught about why people smoke	0.82	[0.63, 1.06]	0.85	[0.71, 1.02]
Taught about smoking prevalence	0.79	[0.54, 1.14]	0.95	[0.78, 1.15]
Taught about physical harm from smoking	0.69	[0.50, 0.97]	0.89	[0.76, 1.03]
Taught about SHS	0.74	[0.58, 0.95]	0.91	[0.78, 1.06]
Refusal skills training	0.83	[0.45, 1.52]	0.82	[0.64, 1.04]

* OR is odds ratio and CI is confidence interval.
** Results come from models that control for student gender, ethnicity, and grade level.

Tobacco Use Prevention Instruction

Tobacco Lessons, Hours of Instruction, and Infusion of Tobacco Lessons

The relationship of tobacco lessons and total hours of instruction to student exposure to program services did not differ markedly in grantee compared to non-grantee schools – although both of these factors had stronger, more positive relationships with student-reported peer abstinence training and tobacco use cessation classes in grantee schools. Overall, however, there was little evidence that grantee schools did a better job in reaching students than non-grantee schools.

Tobacco Use Prevention Topics Covered and Mode of Delivery

The relationship between tobacco use prevention topics covered in lessons and the use of specific instructional strategies used to expose students to TUPE lessons did not differ across grantee and non-grantee schools.

Tobacco Use Prevention Instructional Training and Preparedness

For site coordinators, teacher preparedness was differentially associated with students' reports of exposure to tobacco lessons and lesson content in grantee compared to non-grantee schools. As shown in **Table 7.14**, teachers' reports of preparedness were positively associated with being taught about why people smoke [OR (grantee) = 1.55, p = .03], about the true prevalence of smoking [OR (grantee) = 2.37, p <.0001, about SHS [OR (grantee) = 1.50, p = .03] and getting refusal skills training [OR (grantee) = 2.92, p < .0001] but only at grantee schools. In both grantee and non-grantee schools, site coordinator preparedness to teach TUPE lessons was associated with student receipt of information about the prevalence of tobacco use/nonuse [OR (non-grantee) = 1.47; p < .01; OR (grantee) = 1.27, p = .03] and about the effects of SHS [OR (non-grantee) = 1.63, p < .01; OR (grantee) = 1.29, p = .02].

With respect to the impact of TUPE training on student reports of receiving TUPE-related information, there was little relationship in either grantee or non-grantee schools between the amount of training reported by the site coordinator and student reports of receiving TUPE-relevant information. The one exception was that students in grantee schools were more likely to report hearing information about the effects of SHS when their site coordinator had received TUPE training than when she/he had not received such training [OR = 1.28, p = .02].

In sum, students were more likely to report receiving TUPE information and finding the TUPE information helpful when their TUPE teachers and TUPE coordinators felt well-prepared to teach TUPE lessons. Although one would think that formal training in how to teach TUPE lessons would increase teachers' reported preparedness to teach TUPE, there did not seem to be much correlation between teacher reports of having received such training and student reports of having received TUPE lessons or finding the TUPE information helpful.

Table 7.14 Relationship of Training and Preparedness to Student Reports of Exposure to Lessons and Lesson Content

	Teacher				Coordinator			
	Non-Grantee		Grantee		Non-Grantee		Grantee	
	OR*	95% CI*	OR	95% CI	OR	95% CI	OR	95% CI
Training								
Received information about tobacco at school	1.07	[0.62,1.86]	1.45	[0.63,3.33]	0.91	[0.69,1.20]	1.16	[0.91,1.47]
Tobacco information helpful	1.19	[0.76,1.86]	0.54	[0.15,1.88]	1.00	[0.79,1.28]	1.06	[0.78,1.46]
Tobacco lessons	1.36	[0.65,2.86]	0.82	[0.33,2.05]	1.02	[0.75,1.38]	1.20	[0.89,1.61]
Taught about why people smoke	0.96	[0.57,1.61]	0.78	[0.34,1.80]	1.12	[0.85,1.48]	1.06	[0.80,1.39]
Taught about smoking prevalence	1.22	[0.56,2.65]	1.82	[0.91,3.65]	0.96	[0.72,1.29]	1.18	[0.96,1.44]
Taught about physical harm from Smoking	1.36	[0.68,2.73]	1.00	[0.51,1.96]	0.90	[0.69,1.18]	1.07	[0.88,1.29]
Taught about SHS	1.26	[0.67,2.40]	0.98	[0.47,2.04]	0.97	[0.77,1.22]	1.28	[1.05,1.56]
Refusal skills training	1.83	[0.80,4.18]	1.42	[0.67,3.03]	1.03	[0.68,1.56]	0.88	[0.66,1.17]
Preparedness								
Received information about tobacco at school	1.07	[0.52, 2.23]	1.37	[0.87,2.16]	1.49	[1.04,2.13]	1.19	[0.92,1.55]
Tobacco information helpful	1.45	[0.79, 2.64]	0.76	[0.34,1.74]	1.50	[1.11,2.03]	1.12	[0.81,1.54]
Tobacco lessons	1.19	[0.50, 2.85]	1.18	[0.70,1.97]	1.79	[1.25,2.56]	1.13	[0.86,1.50]
Taught about why people smoke	1.02	[0.46, 2.28]	1.55	[1.04,2.31]	1.54	[1.12,2.11]	1.08	[0.83,1.41]
Taught about smoking prevalence	1.35	[0.64, 2.83]	2.37	[1.71,3.28]	1.47	[1.08,2.02]	1.27	[1.02,1.57]
Taught about physical harm from Smoking	1.19	[0.57, 2.52]	1.39	[0.95,2.04]	1.61	[1.09,2.39]	1.12	[0.92,1.38]
Taught about SHS	1.46	[0.77, 2.78]	1.50	[1.03,2.19]	1.63	[1.19,2.24]	1.29	[1.05,1.59]
Refusal skills training	2.05	[0.85, 4.99]	2.92	[2.01,4.23]	1.55	[0.98,2.45]	0.92	[0.65,1.29]

* OR is odds ratio and CI is confidence interval. If CI includes one, the estimated OR is not significantly different from one.
**Results come from models that control for student gender, ethnicity, and grade level. School-wide Anti-tobacco Activities and Governance.

Tobacco Use Cessation Activities

Grantee and non-grantee high schools were compared with respect to associations between the presence of special programs for students who wanted help quitting their smoking habit – as reported by teachers, coordinators, and administrators – and student reports of peer abstinence training or tobacco use cessation classes. No significant differences were observed between grantee and non-grantee high schools in any of these associations.

Number of School-Wide Activities
There was no evidence across grantee and non-grantee schools that the number of reported school-wide anti-tobacco activities were differentially related to student exposure to TUPE services.

Summary

The purpose of this chapter was to examine how tobacco use prevention policies and practices in California schools were related to students' reported exposure to program services, and to examine differences in these relationships across high schools that received competitive TUPE grants and those that did not receive such grants. The analysis focused on five broad areas of tobacco use prevention/interventions services: 1) no-tobacco-use-on-campus policies, 2) tobacco use prevention instruction, 3) school-wide anti-tobacco activities, 4) tobacco use cessation activities, and, 5) governance. Overall, school-level policies and practices were associated with students' reported exposure to tobacco use prevention services.

For the most part, enforcement of no-tobacco-use-on-campus policies was unrelated to student exposure to prevention services, at least with respect to teacher and coordinator reports. But administrator reports of enforcement were associated with lower levels of exposure to prevention services – the higher the level of enforcement, the less likely students were to report that they received tobacco-related information at school or were exposed to lesson content. Perhaps high levels of enforcement diverted resources away from other prevention activities.

Regarding tobacco use prevention instruction, tobacco use prevention lessons, hours of instruction (teacher), and the use of non-traditional instructional modalities such as small group activities and classroom discussion were positively associated with student recall of exposure to program services.

Students in all schools that sponsored school-wide, tobacco use prevention activities were more likely to report finding the TUPE information helpful, to report peer abstinence training, and to report the availability of tobacco use cessation classes. In TUPE-funded schools only, the sponsorship of school-wide tobacco use prevention activities were associated with higher levels of tobacco-related information received by students and a higher likelihood that students received refusal skills training. In addition, TUPE-funded schools also had a greater likelihood that their students were taught

about why people smoke, youth smoking prevalence, the physical harmfulness of smoking, and the harmfulness of SHS.

Finally, support from the school district, in terms of providing clear expectations that tobacco use prevention lessons be taught, was associated with higher levels of students receiving tobacco-related information and having positive perceptions of its usefulness. This suggests that better quality, more useful, tobacco-related information was provided to students when district administrators expected tobacco use prevention lessons to be taught.

Few differences regarding the effectiveness of program implementation in reaching students were apparent between high schools with and without competitive grants. Tobacco lessons, hours of instruction, infusion of tobacco lessons into non-health-related subjects, topics covered, the mode of instruction, and the presence of tobacco use cessation activities were not differentially associated with students' reported exposure to program services in grantee compared to non-grantee schools. However, several exceptions to this were apparent. For example, school coordinator preparedness to teach tobacco use prevention lessons was more positively associated with student exposure to program services in grantee schools than in non-grantee schools. Coordinator-rated support from district administrators was also more positively associated with student exposure to services in grantee schools compared to non-grantee schools.

Appendix 7.1 Constructs and Items Used in the Analysis (Adult Survey)		
Construct	**Question Number (Q)[1]**	**Question**
Tobacco Policy		
Enforcement of no-tobacco-use -on-campus policy	T Q38 C Q43	In your opinion, to what extent is your school's tobacco-free policy being enforced during school hours?
Consequences of violation	T Q40 C Q42 A Q27	What happens to students who are caught using tobacco products at your school? (Mark all that apply)
Punitive	T Q40_1 C Q42a A Q27a	They are suspended / expelled
	T Q40_8 C Q42h A Q27h	Their parents are called in for a conference
Supportive	T Q40_3 C Q42c A Q27c	They are referred to a special class
	T Q40_4 C Q42d A Q27d	They can choose to attend a special class in lieu of suspension
	T Q40_9 C Q42i A Q27i	They are REFERRED to a tobacco use cessation clinic or program
	T Q40_10 C Q42j A Q27j	They are REQUIRED to go to a special tobacco education class (i.e., Saturday school)
Tobacco Use Prevention Instruction		
Lessons taught	T Q9 C Q10	During the last school year (2002-03), did you teach any tobacco use prevention lessons?
Hours of instruction	T Q10 C Q11	During the last school year (2002-03), on average how many hours did you spend teaching tobacco use prevention lessons to a classroom of students?
Infusion of tobacco lessons into other subjects	T Q13 C Q20	During the last school year (2002-03), did you teach any information about tobacco use that you infused into your subject areas (for example, discussing how many people use tobacco or the cost of using tobacco as part of a math lesson)?
Published curriculum	T Q14 C Q21	During the last school year (2002-03), did you teach any tobacco use prevention lessons from a PUBLISHED curriculum? (Note: By "published" curriculum, we mean those published by commercial

Appendix 7.1 Constructs and Items Used in the Analysis (Adult Survey)		
Construct	**Question Number (Q)[1]**	**Question**
		companies, community organizations, your school district, etc.)
Topics covered	T Q16 C Q22	During the last school year (2002-03), which of the following topics did you cover in your tobacco use prevention lessons? (Mark all that apply)
	T Q16_8 C Q22h	Behavioral skills for resisting tobacco offers
	T Q16_9 C Q22i	General personal and social skills (e.g., problem-solving, assertiveness, communication, and goal-setting)
Mode of delivery	T Q18 C Q23	In the tobacco use prevention lessons you taught last year (2002-03), how much did you use the following instructional strategies?
Traditional	T Q18a C Q23a	Classroom discussion
	T Q18c C Q23c	Lecture
Non-Traditional	T Q15b C Q23b	Small group activities
	T Q18d C Q23d	Student worksheets
	T Q18e C Q23m	Role-playing
Training	T Q25 C Q30c\d\e	During the past five years, how much tobacco use prevention training have you received?
	T Q26	During the past five years, were you trained to deliver a SPECIFIC published tobacco use prevention curriculum?
	T Q27 C Q31	Overall, to what extent do you feel you are prepared to teach tobacco use prevention lessons?
Barriers to teaching lessons	T Q20 C Q26 A Q20	Which of the following have been BARRIERS to your teaching tobacco use prevention lessons? (Mark all that apply)
	T Q20_1 C Q26a A Q20a	Tobacco use prevention is not part of my curriculum

Appendix 7.1 Constructs and Items Used in the Analysis (Adult Survey)		
Construct	**Question Number (Q)[1]**	**Question**
	T Q20_2 C Q26b A Q20b	Tobacco use prevention education is not mandated in my school or district
	T Q20_3 C Q26c A Q20c	Tobacco use prevention is not part of student outcomes that are assessed
	T Q20_4 C Q26d A Q20e	Lack of adequate instructional materials (or curricula)
	T Q20_5 C Q26e A Q20f	Lack of time
	T Q20_6 C Q26g A Q20h	Our school district has not made tobacco use prevention a high priority
	T Q20_7 C Q26h A Q20i	Our school administrator/school has not made tobacco use prevention a high priority
	T Q20_8 C Q26i A Q20j	I/teachers have not received adequate tobacco use prevention training
School-wide anti-tobacco activities		
Activities	T Q33 C Q37 A Q21	During the last school year (2002-03), did your school do any of the following? (Mark all that apply)
	T Q33_2 C Q37b A Q21b	Celebrate a special day called the “Great American Smokeout”

Appendix 7.1 Constructs and Items Used in the Analysis (Adult Survey)		
Construct	**Question Number (Q)[1]**	**Question**
	T Q33_3 C Q37c A Q21c	Hold an assembly or other event about tobacco use prevention
	T Q33_4 C Q37d A Q21d	Hold a contest (for example, a poster or essay contest) about tobacco
	T Q33_5 C Q37e A Q21e	Sponsor an anti-tobacco club
	T Q33_6 C Q37f A Q21f	Participate in tobacco use prevention activities with the local health department
	T Q33_7 C Q37g A Q21g	Display tobacco-related posters (made by students or others)
	T Q33_8 C Q37h A Q21h	Offer smoking cessation classes or programs
	T Q33_9 C Q37i A Q21i	Celebrate Drug Free Week or Red Ribbon Week
Governance		
Support from district	T Q8	Does your school district administration expect you to teach tobacco use prevention lessons as part of your curriculum?
	T Q28 C Q34 A Q11	To what extent have your school DISTRICT administrators supported you in your teaching of tobacco use prevention lessons?
School Support	T Q6	In relation to other health education topics, what priority does tobacco use prevention education hold at your school?

[1] T, C, and A refer to **T**eacher, Site-**C**oordinator, and School **A**dministrator questionnaires, respectively.

CHAPTER 8

RELATIONSHIP OF SCHOOL-LEVEL POLICIES AND PRACTICES TO STUDENT TOBACCO USE OUTCOMES

CHAPTER 8: RELATIONSHIP OF SCHOOL-LEVEL POLICIES AND PRACTICES TO STUDENT TOBACCO USE OUTCOMES

CHAPTER HIGHLIGHTS

- **There was little systematic evidence to indicate that school-level tobacco policies (like enforcement of no-tobacco-use-on-campus policies; punitive and supportive consequences for violation) and TUPE practices were associated with student tobacco use or tobacco use precursors.**
- **The only consistent evidence related to student tobacco use involved hours of TUPE instruction: the higher the number of hours, the lower the tobacco use and the higher the anti-smoking precursors (such as intent not to smoke).**
- **As with student reports of program exposure, student anti-smoking attitudes and beliefs (intent not to smoke, low peer smoking estimates, anti-tobacco industry attitudes) were associated with teachers' perceptions of support and a clear mandate from the school district that teachers were expected to teach tobacco use prevention education to students.**
- **Differences in student tobacco use and tobacco use precursors were not differentially associated with program policies and practices in grantee compared to non-grantee schools.**

Introduction

The results in Chapter 7 suggested that school-level tobacco use prevention and intervention activities were weakly associated with students' reported exposure to program services. The purpose of Chapter 8 is to examine how the policies and practices discussed in Chapter 7 are related to student tobacco use outcomes. This chapter also examines differences in program "effectiveness" in high schools that received competitive TUPE grants compared to those that did not receive such grants.

This chapter discusses and presents associations between policies/practices and student outcomes. Although it may be tempting to make inferences about the effectiveness or lack of effectiveness of policies and practices based on these associations, inferences about causality should not be made. The In-School Evaluation of Tobacco Use Prevention Education (TUPE) Programs (IETP) uses an exclusively cross-sectional design. Cross-sectional data does not permit investigators to disentangle the reciprocal influences of school practices and student tobacco use outcomes from each other. For example, a particular school practice – such as posting signs on school grounds stating that tobacco use is prohibited – may be associated with greater levels of student tobacco use. This hypothetical positive association could be interpreted two ways. Posting signs may actually increase student tobacco use or, conversely, administrators who discover high numbers of students who smoke at their school may feel compelled to combat the problem by posting signs indicating that tobacco use is prohibited. It is impossible to make strong conclusions about program effectiveness based exclusively on the cross-sectional data that are the basis of the analyses reported here. Care should also be taken in interpreting differences in associations between school practices and student outcomes across high schools that received TUPE competitive grants and those that did not receive such grants. Schools are not randomly assigned to grantee and non-grantee conditions. Nor are schools randomly assigned to deliver different dosages and/or different types of tobacco use prevention and intervention services. IETP data is naturalistic and cross-sectional, so inferences about program effectiveness should be made with caution.

Despite these limitations, the analyses reported here are still valuable in that they can suggest how different tobacco policies and practices may affect student tobacco use and the precursors to tobacco use.

Analytic Strategy

The analytic strategy used in this chapter is almost identical to that used in Chapter 7 – with the exception that student reports of actual tobacco use and known precursors to tobacco use were investigated instead of student reports of exposure to TUPE programs and services. Using logistic or ordinary least squares regression models, each tobacco outcome was modeled as a function of policies and practices, grade in school, gender, and a set of dichotomous variables representing racial/ethnic group membership. As with all analyses in this report, the estimation procedures take into account sample weighting, clustering, and stratification.

Measures

Tobacco Use Policies and Practices

The tobacco use policy and practice measures are the same as those provided in Chapter 7 (see Table 7.1 and Appendix Table A7.1).

Student Tobacco Use, and Precursors to Tobacco Use

This chapter examined five measures of smoking prevalence: lifetime cigarette use, lifetime regular cigarette use (100+ cigarettes), 30-day cigarette use (current smoker), frequent cigarette use (20+ days in past 30 days), and 30-day cigarette use on school property. It also examined how proximal factors known to be associated with future smoking (i.e., low endorsement of items assessing the social desirability of smoking), such as intentions to smoke, peer cigarette use, and beliefs about the negative social consequences of smoking, are associated with tobacco programs and policies. These measures have been described in more detail in Chapter 3.

School Tobacco Policies and Practices and Student Tobacco Outcomes

No-Tobacco-Use-on-Campus Policy

Enforcement of No-Tobacco-Use-on-Campus Policy and Consequences for Students Who Violate Policy

Although student prohibitions against smoking on school grounds are almost universal in California schools, there is some variation across schools in the level of enforcement of these prohibitions. Overall, neither teacher nor coordinator reports of the level of enforcement of no-tobacco-use-on-campus policies were related to student reports of smoking or the precursors to smoking. In addition, punitive and supportive policies regarding the consequences for students caught violating the no-smoking policy were generally unrelated to student tobacco outcomes. The relationships between punitive/supportive responses to student tobacco outcomes are presented in **Table 8.1**. Most of the tobacco use outcomes were unaffected by the nature of the punishment given to students caught smoking on school grounds. Several statistically significant associations with precursors of smoking were evident, however. Based on site administrator reports, suspension policies were associated with lower student rates of smoking on school property (OR = 0.73; 95% CI: 0.56 – 0.94), while supportive policies were associated with marginally higher rates of smoking at school (OR = 1.25, 95% CI: 0.97 – 1.61). Administrator reports of the nature of enforcement of school tobacco-free policies were associated with two precursors of smoking: intent to smoke and ease of cigarette refusal. Punitive policies were associated with an increased likelihood of students reporting an intention NOT to smoke (OR = 1.15, 95% CI: 1.03 – 1.27) and increased likelihood of students reporting ease of cigarette refusal (OR = 1.14, 95% CI: 0.98 – 1.33). Supportive policies, on the other hand, were associated with a significantly decreased likelihood of students reporting an intention NOT to smoke (OR = 0.87, 95%

CI: 0.79 – 0.97) and a decreased likelihood of students reporting ease of cigarette refusal (OR = 0.90, 95% CI: 0.80 – 1.00). Some may view it as a result of supportive policies encouraging smoking. However, it could be that schools with more students who smoke were more likely to shelve their suspension policies and implement more supportive policies to combat student smoking. There is a strong and consistent relationship regarding an increased negative attitude about the consequences of smoking across the three groups of adults – teachers, site coordinators, and site administrators – when teachers and site coordinators reported use of more supportive strategies to enforce their school's tobacco-free policy. Student reports of a similar increase in negative attitudes about the social consequences of smoking were also associated with site administrator reports, but only when site administrators indicated that their schools relied more on punitive strategies to enforce their tobacco-free policy.

Differences by Competitive Grant Status

The relationship between the level of enforcement of no-tobacco-use-on-campus policies and student tobacco outcomes did not differ by TUPE competitive grantee status. Nor, for the most part, were student tobacco outcomes differentially related to punitive and supportive policies regarding the consequences for students who are caught smoking in grantee compared to non-grantee high schools. An exception was a differential pattern seen for the association of punitive/supportive policies on lifetime smoking rates. In TUPE-funded schools, teacher-reported use of a punitive approach to enforcing the school's tobacco-free policy was associated with decreased lifetime use (OR = 0.83; 95% CI = 0.72 – 0.95) whereas in non-TUPE-funded schools, teacher-reported use of a punitive approach was associated with increased lifetime use (OR = 1.19; 95%
CI = 1.01 – 1.40). The latter situation is probably most simply explained by assuming that in the absence of TUPE funding, schools may have invoked low-cost punitive tobacco use prevention steps only in response to higher perceived student tobacco use. Longitudinal studies at the school-level could help to confirm or dispell the causal direction implied by this speculative explanation.

Table 8.1 Relationship of Consequences of Violation of No-Tobacco-Use-on-Campus Policy to Student Tobacco Outcomes

	Teacher				Site Coordinator				Site Administrator			
	Punitive		Supportive		Punitive		Supportive		Punitive		Supportive	
	OR*	95% CI*	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Lifetime cigarette use	1.06	[0.83,1.35]	0.95	[0.72,1.23]	1.02	[0.83,1.25]	0.94	[0.75,1.17]	0.89	[0.73,1.10]	1.10	[0.91,1.33]
Lifetime 100+ cigarette use	1.29	[0.86,1.90]	0.96	[0.71,1.30]	1.20	[0.92,1.58]	0.98	[0.73,1.33]	0.92	[0.68,1.24]	0.89	[0.68,1.17]
Current cigarette use	1.04	[0.88,1.24]	0.97	[0.82,1.15]	1.13	[0.95,1.33]	0.96	[0.81,1.12]	0.90	[0.79,1.03]	1.11	[0.94,1.31]
Frequent cigarette use	1.62	[0.61,4.32]	0.54	[0.10,2.88]	1.54	[0.58,4.07]	0.91	[0.44,1.92]	0.81	[0.22,3.04]	0.58	[0.29,1.14]
(20+ days) Smoke at school	0.99	[0.68,1.43]	0.95	[0.66,1.38]	1.00	[0.77,1.29]	1.15	[0.88,1.50]	0.73	[0.56,0.94]	1.25	[0.97,1.61]
Intent to not smoke	0.98	[0.84,1.15]	1.09	[0.94,1.26]	0.93	[0.82,1.06]	0.99	[0.85,1.16]	1.15	[1.03,1.27]	0.87	[0.79,0.97]
Ease of cigarette refusal	0.96	[0.82,1.11]	1.07	[0.95,1.19]	0.93	[0.81,1.07]	0.99	[0.86,1.13]	1.14	[1.03,1.26]	0.90	[0.80,1.00]
Peer cigarette use	1.02	[0.87,1.20]	0.94	[0.79,1.11]	1.08	[0.92,1.29]	0.89	[0.75,1.06]	0.92	[0.77,1.09]	1.14	[0.97,1.35]
Accurate smoking norms	1.06	[0.87,1.30]	1.26	[0.91,1.75]	0.99	[0.84,1.17]	1.24	[1.05,1.46]	1.14	[0.98,1.33	0.99	[0.84,1.17]
	β**	P value	β	P value	β	P value	β	P value	β	P value	β	P value
Beliefs about the negative social consequences of smoking	-0.019	0.56	0.036	0.22	-0.001	0.98	0.025	0.47	0.092	0.00	0.038	0.21
Anti-cigarette industry norms	-0.001	0.97	0.017	0.41	-0.017	0.26	0.048	0.00	-0.007	0.65	0.030	0.08
Perceived physical harm from smoking	0.017	0.50	0.001	0.96	0.014	0.54	0.042	0.02	0.011	0.61	0.062	0.00

*OR is odds ratio and CI is confidence interval. ORs and 95 percent CIs come from logistic regression models.
** β is regression coefficient which comes from the ordinary least squares regression models.
*** All results come from models that control for student gender, ethnicity, and grade level.

Tobacco-Related Instruction

Tobacco Lessons, Hours of Instruction, and Infusion of Tobacco-related Topics
Teacher and coordinator reports of tobacco lessons and total hours of tobacco-related instruction were not found to be associated with most of the student tobacco outcome measures assessed. These results are shown in **Table 8.2**. Total teacher instruction time was positively associated with students reporting a lower likelihood of frequent smoking (OR = 0.91, 95% CI: 0.81 – 5.79) and with stronger beliefs about the negative social consequences of smoking ($\beta = 0.007$, $p < 0.01$). Overall however, there was little evidence that schools where teachers reported more hours of TUPE instruction had lower levels of student tobacco use. In contrast to findings in the 2001-2002 IETP Final Report, this report found no evidence that the infusion of tobacco-related topics into non-health related subjects was associated with lower rates of tobacco use in schools.

Table 8.2 Relationship of Hours of Instruction and Lessons to Student Tobacco Outcomes

	Teacher			
	Hours of Instructions		Lessons	
	OR*	95% CI*	OR	95% CI
Lifetime cigarette use	1.00	[0.99, 1.02]	0.92	[0.72, 1.17]
Lifetime 100+ cigarette use	0.99	[0.95, 1.03]	1.19	[0.80, 1.77]
Current cigarette use	0.99	[0.96, 1.02]	0.91	[0.70, 1.18]
Frequent cigarette use (20+ days)	0.91	[0.81, 5.79]	1.35	[0.43, 4.28]
Smoke at school	0.97	[0.94, 1.00]	0.94	[0.63, 1.40]
Intent to not smoke	1.01	[1.00, 1.02]	1.12	[0.94, 1.34]
Ease of cigarette refusal	1.01	[1.00, 1.03]	1.15	[0.95, 1.38]
Peer cigarette use	1.00	[0.98, 1.03]	0.93	[0.76, 1.13]
Accurate smoking norms	1.01	[0.99, 1.02]	1.21	[0.95, 1.55]
	β**	**P value**	**β**	**P value**
Beliefs about the negative social consequences of smoking	0.007	0.01	0.058	0.13
Anti-cigarette industry norms	-0.002	0.42	0.000	1.00
Perceived physical harm from smoking	-0.000	0.89	0.027	0.57

* OR is odds ratio and CI is confidence interval. ORs and 95 percent CIs come from logistic regression models.
**β is regression coefficient which comes from the ordinary least squares regression models.
*** All results come from models that control for student gender, ethnicity, and grade level.

Differences by Competitive Grant Status

Teacher and coordinator reports of tobacco lessons and infusion of tobacco-related topics into non-health related subjects were not found to be differentially related to student tobacco outcomes by high school competitive grant status (not shown). However, the relationship of teacher reported “hours of tobacco-related instruction” to student tobacco use and its precursors did differ by grantee status. As shown in **Table 8.3**, hours of instruction at TUPE-funded high schools appeared to be negatively associated with smoking at school (OR = 0.96, 95% CI: 0.91 – 1.00) and positively related to intent NOT to smoke (OR = 1.04, 95% CI: 1.01 –1.07). Hours of instruction at TUPE-funded high schools was also positively related to reported ease of cigarette refusal (OR = 1.03, 95% CI: 1.00 – 1.06). These associations, however, were not observed at non-grantee schools. By contrast, hours of tobacco use education instruction in the non-grantee schools was associated with a decreased likelihood of students reporting frequent cigarette use (OR = 0.88, 95% CI: 0.75 – 1.02) and with increasingly negative beliefs about the social consequences of smoking ($\beta = 0.007$, $p = 0.02$). Regardless of TUPE funding status, hours of tobacco use prevention instruction was generally associated with decreased tobacco use, as well as with attitudes and beliefs consistent with lower tobacco use.

Table 8.3 Relationship of Hours of Instruction to Student Tobacco Outcomes by Grantee Status

	Hours of Instruction (Teacher Report)			
	Non-grantee		Grantee	
	OR*	95% CI*	OR	95% CI
Lifetime cigarette use	1.00	[0.98, 1.02]	1.02	[0.98, 1.06]
Lifetime 100+ cigarette use	0.99	[0.95, 1.03]	0.98	[0.91, 1.07]
Current cigarette use	0.99	[0.96, 1.02]	0.99	[0.94, 1.03]
Frequent cigarette use (20+ days)	0.88*	[0.75, 1.02]	1.04	[0.86, 1.26]
Smoke at school	0.98	[0.94, 1.01]	0.96*	[0.91, 1.00]
Intent to not smoke	1.00	[0.99, 1.02]	1.04**	[1.01, 1.07]
Ease of cigarette refusal	1.01	[1.00, 1.03]	1.03*	[1.00, 1.06]
Peer cigarette use	1.01	[0.98, 1.03]	1.00	[0.98, 1.03]
Accurate smoking norms	1.01	[0.99, 1.03]	0.99	[0.97, 1.02]
	β**	P value	β	P value
Beliefs about the negative social consequences of smoking	0.007**	0.02	0.004	0.31
Anti-tobacco industry norms	-0.002	0.34	0.003	0.53
Perceived health consequences from smoking	0.000	0.95	-0.003	0.42

* OR is odds ratio and CI is confidence interval. ORs and 95 percent CIs come from logistic regression models.
**β is regression coefficient which comes from the ordinary least squares regression models.
*** All results come from models that control for student gender, ethnicity, and grade level.

Use of Published Tobacco Use Prevention Curriculum, Topics Covered, and Mode of Delivery

Overall, there was little evidence that the use of a published tobacco use prevention curriculum was consistently associated with student tobacco outcomes. “Published” is intended to indicate any established school-based tobacco control program, whether approved by CDC and/or CDE or not, and based on respondent self-report that it was “published.” The ACS “Great American Smokeout” was an example of a program that teachers cited as having been used, even though it is not considered evidence-based or science-based. Neither teacher- nor TUPE coordinator-reported topics covered in their classes were consistently related to these outcomes.

Teacher reports of the methods used to deliver tobacco lessons (e.g., lectures, class discussions) were unrelated to student tobacco use and unrelated to the precursors to tobacco use. The only exception, counter-intuitively, was the significant relationship between use of classroom discussions and students reporting less lifetime cigarette use (OR = 0.61, 95% CI: 0.42 – 0.90) and less peer cigarette use (see **Table 8.4**) (OR = 0.61, 95% CI: 0.46 – 0.82). Also counter-intuitively, coordinator reports suggested that students were more likely to report lifetime smoking if they were in classes where the teacher relied primarily on classroom discussions as the strategy for imparting TUPE information. As shown in Table 8.4, students in schools where coordinators relied on classroom discussion strategies for prevention instruction reported higher levels of lifetime cigarette use (OR = 1.22, 95% CI: 1.08 – 1.37) and smoking at school (OR = 1.35, 95% CI: 1.05 – 1.73). At first glance, it might appear that coordinators' use of classroom discussions about tobacco use education caused students to experiment with smoking and for teachers to cause students to report less negative attitudes about the social consequences of tobacco use. An equally plausible explanation, however, was that coordinators were more likely than other teachers to be invited to present tobacco control lectures to classes where tobacco use by students had been discovered to be unusually high. Teachers may also tend to rely more heavily on classroom discussions (instead of lecture, etc.) when student tobacco use attitudes were more favorably inclined towards the social consequences of tobacco use. Longitudinal data would help determine which of these explanations was more plausible.

Differences by Competitive Grant Status

The use of published vs. unpublished curricula, topics covered, or methods of instruction were not related to student tobacco outcomes across high schools with competitive grants or those without such grants.

Table 8.4 Relationship of Using Classroom Discussion in Prevention Lessons to Student Tobacco Outcomes

Outcome variable	Teacher reports		Site Coordinator	
	OR*	95% CI*	OR	95% CI
Lifetime cigarette use	0.61	[0.42, 0.90]	1.22	[1.08, 1.37]
Lifetime 100+ cigarette use	0.91	[0.38, 2.18]	1.24	[0.93, 1.66]
Current cigarette use	0.69	[0.40, 1.18]	1.13	[0.98, 1.31]
Frequent cigarette use (20+ days)	0.44	[0.03, 7.44]	1.55	[0.60, 4.00]
Smoke at school	0.59	[0.27, 1.30]	1.35	[1.05, 1.73]
Intent to not smoke	1.24	[0.97, 1.69]	0.92	[0.82, 1.03]
Ease of cigarette refusal	1.17	[0.89, 1.52]	0.94	[0.84, 1.06]
Peer cigarette use	0.61	[0.46, 0.82]	1.17	[0.97, 1.40]
Accurate smoking norms	1.33	[0.77, 2.29]	0.97	[0.84, 1.13]
	β**	P value	β	P value
Beliefs about the negative social consequences of smoking	0.052	0.31	-0.015	0.60
Anti-cigarette industry norms	0.044	0.26	0.015	0.42
Perceived physical harm from smoking	0.061	0.05	-0.003	0.81

* OR is odds ratio and CI is confidence interval. ORs and 95 percent CIs come from logistic regression models.
**β is regression coefficient which comes from the ordinary least squares regression models.
*** All results come from models that control for student gender, ethnicity, and grade level.

School-wide Anti-tobacco Activities

Number of School-wide Anti-tobacco Activities

The number of school-wide tobacco use prevention activities that took place at schools during the year prior to the survey was unrelated to most of the student tobacco use outcomes and unrelated to most precursors, as **Table 8.5** illustrates.

Differences by Competitive Grant Status

No evidence was found to support a difference in the relationship between the number of school-wide tobacco use prevention activities and student tobacco outcomes at grantee vs. non-grantee high schools.

Table 8.5 Relationship of School-Wide Activities to Selected Student Tobacco Outcomes

	Teacher		Site Coordinator		Site Administrator	
	OR*	95% CI*	OR	95% CI	OR	95% CI
Ease of cigarette refusal	1.04	[1.00, 1.08]	1.01	[0.99, 1.03]	1.00	[0.98, 1.03]
	β**	P value	β	P value	β	P value
Beliefs about the negative social consequences of smoking	0.027	0.01	0.007	0.16	0.011	0.13
Anti-cigarette industry norms	0.013	0.17	0.006	0.08	0.002	0.65
Perceived physical harm from smoking	0.007	0.30	0.002	0.56	0.004	0.37

* OR is odds ratio and CI is confidence interval. ORs and 95 percent CIs come from logistic regression models.
**β is regression coefficient which comes from the ordinary least squares regression models.
*** All results come from models that control for student gender, ethnicity, and grade level.

Governance

Support from District, and Priority of Tobacco Use Prevention at School
This chapter also examined how issues surrounding the governance of TUPE at schools were related to student tobacco outcomes, focusing on the level of support received from the district and the priority of tobacco use prevention at the school. Surprisingly, the perceived priority of TUPE at the school was not related to student tobacco outcomes. The only exception was that students at schools where teachers reported that TUPE was a "high" priority were less likely to report high-frequency smoking (20+ cigarettes per month) (OR = 0.24; 95% CI: 0.07 – 0.83). Otherwise students exhibited similar tobacco use rates and similar tobacco use risk profiles regardless of the degree to which TUPE was prioritized at the school.

However, the perceived TUPE support from the district was related to some of the student outcomes assessed. As presented in **Table 8.6**, students in schools where teachers reported that the district expected them to teach tobacco use prevention lessons reported a greater likelihood of intending not to smoke (OR = 1.27, 95% CI: 1.01 – 1.60) and more negative attitudes about the social consequences of smoking (β = 0.108, p =0.02). Although the results suggested that teacher perceptions of support from the district were linked to slightly better student tobacco outcomes, the results for site coordinator reports in Table 8.6 show a less consistent pattern. Schools where site coordinators reported that district administrators expected them to teach TUPE lessons, had higher rates of smoking (OR= 1.36, 95% CI: 1.07–1.73). This result was consistent, however, with lower student ratings regarding the harmfulness of tobacco use (β = -0.023, p = 0.09) when site coordinators reported that their district expected them to teach TUPE lessons. The inconsistency of findings for the site coordinator data and the consistency of findings for the teacher data led us to conclude that teachers who

perceived that their district expected them to teach TUPE lessons and strongly supported the school's TUPE program had students who reported lower levels of several precursors to smoking, especially more strongly negative beliefs about the negative social consequences of smoking.

Table 8.6 Relationship of Support from District to Student Tobacco Outcomes

	Teacher				Site Coordinator			
	Expected to teach		Level of support		Expected to teach		Level of support	
	OR*	95% CI*	OR	95% CI	OR	95% CI	OR	95% CI
Lifetime cigarette use	0.94	[0.66,1.33]	0.99	[0.78,1.25]	1.07	[0.85,1.34]	1.15	[0.95,1.38]
Lifetime 100+ cigarette use	1.05	[0.58,1.89]	1.17	[0.74,1.83]	1.11	[0.80,1.54]	1.09	[0.82,1.44]
Current cigarette use	0.77	[0.54,1.11]	0.90	[0.67,1.20]	1.07	[0.90,1.29]	1.04	[0.86,1.25]
Frequent cigarette use (20+ days)	0.92	[0.23,3.73]	2.54	[0.72,8.97]	1.68	[0.67,4.17]	1.39	[0.46,4.17]
Smoke at school	0.79	[0.49,1.28]	0.99	[0.65,1.49]	1.36	[1.07,1.73]	1.26	[0.99,1.62]
Intent to not smoke	1.27	[1.01,1.60]	1.09	[0.91,1.29]	1.01	[0.90,1.13]	0.97	[0.83,1.14]
Ease of cigarette refusal	1.32	[1.07,1.63]	1.13	[0.95,1.35]	1.07	[0.98,1.17]	1.06	[0.91,1.22]
Peer cigarette use	0.82	[0.55,1.23]	0.96	[0.72,1.28]	1.00	[0.79,1.25]	1.13	[0.93,1.36]
Accurate smoking norms	1.21	[0.90,1.62]	1.06	[0.85,1.30]	1.06	[0.87,1.28]	1.00	[0.82,1.23]
	β**	P value	β	P value	β	P value	β	P value
Beliefs about the negative social consequences of smoking	0.108	0.02	0.091	0.01	0.051	0.17	-0.036	0.33
Anti-cigarette industry	-0.012	0.75	0.000	0.99	0.016	0.41	0.019	0.31
Perceived physical harm from smoking	-0.009	0.84	-0.012	0.68	-0.023	0.09	-0.014	0.33

* OR is odds ratio and CI is confidence interval. ORs and 95 percent CIs come from logistic regression models.
**β is regression coefficient which comes from the ordinary least squares regression models.
*** All results come from models that control for student gender, ethnicity, and grade level.

Differences by Competitive Grant Status

In terms of support from the district for tobacco use prevention, no differences were apparent between grantee and non-grantee high schools and associations with student tobacco outcomes. Grantee/non-grantee differences were not detected when analyzing

the relationship between teacher and coordinator reports of the priority of tobacco use prevention to student tobacco use outcomes.

Summary

This chapter examined how tobacco use prevention policies and practices in California schools were related to student tobacco use and proximal precursors to tobacco use, such as students' intentions not to smoke. Differences in these relationships were examined across high schools that received competitive TUPE grants and those that did not receive such grants. For the most part, significant grantee/non-grantee differences were rare and were difficult to interpret. These inconsistent and infrequent differences demonstrated that TUPE funding status did not appear to contribute importantly to student tobacco use outcomes.

Overall, school-level policies and practices were only occasionally related to student tobacco use and tobacco use precursors. Enforcement of no-smoking policies, punitive and supportive consequences for students caught smoking, tobacco lessons, hours of instruction, the use of a published curriculum, and teacher tobacco use prevention training were only occasionally related to student tobacco use or precursors to use. In addition, students in schools that sponsored school-wide, tobacco use prevention activities, such as Red Ribbon week and the Great American Smoke-out, did not smoke less or exhibit lower smoking risk compared to students in other schools nor were they more likely to endorse anti-tobacco beliefs and attitudes.

In no area was there consistent evidence that tobacco policies and practices were related to lower levels of student smoking. The most consistent evidence consisted of the associations between hours of TUPE instruction and lower levels of tobacco use and tobacco use precursors, such as students' intent not to smoke. Support from the school district, in terms of making it clear to teachers that they were expected to teach tobacco use prevention lessons, was associated with higher levels of students' intentions not to smoke, lower student estimates of peer smoking prevalence, and more strongly negative student attitudes about the tobacco industry.

Although at first glance the overall lack of relationships of tobacco policies and practices to student tobacco use might suggest that tobacco use prevention activities were not effective, the cross-sectional nature of the survey data that is the basis of these analyses precludes making such a judgment.

Another safe conclusion was that students reported increasingly negative attitudes about the consequences of smoking when teachers and site coordinators reported use of more supportive strategies to enforce their school's tobacco-free policy. A possible pattern was observed, especially among non-grantee schools, that schools used low-cost punitive smoke-free enforcement policies in lieu of investing in the more expensive provision of TUPE resources, including tobacco use cessation classes. It is clear that punitive smoke-free enforcement policies could be consistent with lower student tobacco use and student attitudes that were more hostile toward tobacco use. The

impact could be stronger if accompanied by supportive policies. The consistent negative student attitudes against tobacco use and tobacco precursor outcomes were associated with the implementation of comprehensive TUPE programs by well-prepared teachers in the context of a TUPE-supportive district. While money is a prerequisite to implementing an optimal TUPE program, some initiatives, such as communicating district support for their schools' TUPE programs, can make a difference without a major investment of money.

CHAPTER 9

CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 9: CONCLUSIONS AND RECOMMENDATIONS

CHAPTER HIGHLIGHTS

- Current youth tobacco use rates observed in California were the lowest ever recorded in the state and lower than national rates - especially for middle school students. Beliefs and attitudes reported by California youth were consistent with these observed behavioral differences.
- Many school-based TUPE activities were effective in reaching students (in terms of exposure to TUPE lessons, not student tobacco use), whether they attended TUPE grantee or non-grantee schools. The most striking feature of the results was the lack of association between a school's TUPE funding status and student tobacco use outcomes.
- Students consistently reported more positive tobacco use prevention results when TUPE classes featured classroom discussions of tobacco control messages or small group activities, particularly for refusal skills training.
- Use of CDE-recommended programs was associated with an increased percentage of students reporting acquisition of refusal skills. The data also indicated that dedicated teachers with past experience teaching TUPE lessons could positively affect student outcomes, even if they did not report using a science-based TUPE curriculum**.**
- Although administrators expressed high levels of support for TUPE instruction, teachers reported that lack of district (and state) support for TUPE was an important barrier to school-based tobacco control efforts.
- The enviably low rates of tobacco use reported here are going to be hard to maintain in the face of dwindling state TUPE resources, either with respect to school-based tobacco control or with respect to community tobacco control efforts.
- A few, very experienced TUPE teachers can yield better tobacco use education outcomes among students compared to many inexperienced TUPE teacher recruits.
- Additionally, school district administrators need to publicly support TUPE activities, to publicize this support regularly and to indicate that TUPE instruction is as important as other academic instruction.
- Attempts to assess the impact of TUPE grant funding on student learning were complicated due to the cross-sectional nature of the data and the patterns of the results. The safest conclusion is that prospective longitudinal research is necessary to be able to draw causal inferences from the data collected.

Introduction

This evaluation focused on four broad research questions with regard to youth tobacco use and prevention in California:

1. What is the prevalence of tobacco-related behavior, attitudes, knowledge and awareness about tobacco and tobacco use prevention among California students?

2. What types of school-based tobacco use prevention and intervention policies and practices are being implemented in California schools and to what level and consistency are they being implemented?

3. Is program exposure associated with lower levels of student tobacco use and lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes)?

4. What are the contextual influences, such as the degree of support for teaching TUPE lessons from district administrators, which need to be taken into account when designing more effective school-based Tobacco Use Prevention Education (TUPE) programs?

The foregoing chapters have reviewed 2003-2004 tobacco use patterns observed in California in-school youth and related this epidemiological information to school district staff information about TUPE-funded activities conducted in the recent past. Both school-level and district-level influences on students' rates of tobacco use were examined, although the focus has been on the school-level information.

This evaluation of California in-school youth must, of course, be understood in the context of the large backdrop of TUPE occurring at the community, state and national levels. A demonstrably beneficial statewide policy change has been the 80 percent rise in the price of cigarettes observed between 1999 and 2004. This price rise occurred as a result of a 1999 $0.50 increase in the state tobacco excise tax and by accompanying tobacco industry price increases (reviewed in Rohrbach et al., 2002). All ages and ethnic groups reduce tobacco use with increased price of tobacco products, but younger adolescents and African Americans are the most responsive (e.g., Chaloupka and Pacula, 1999).

California Student Tobacco Use Continues to Decline

The observed student tobacco use prevalence rates reported here reflect the complex survey design used to collect the data and were cross-validated against the rates observed in a parallel random sample survey conducted in the same population during the same time interval. These rates were compared to the 2001-2002 IETP rates obtained using a very similar instrument and similar methods as those employed here. The rates were also compared to sets of California youth smoking prevalence rates

obtained periodically since 1995-1996 (Rohrbach et al., 2002) and to corresponding rates observed in randomly-sampled in-school youth across the United States. Especially for middle school tobacco use rates, the current youth tobacco use rates observed in California were the lowest ever recorded in the state and lower than national rates. Beliefs and attitudes reported by California youth were consistent with these observed behavioral differences. Prevention of tobacco use in school children appears to be working in California. California youth appear to be well-protected against tobacco use relative to past years and relative to the rest of the United States.

Program Implementation and Linkages to Student Outcomes: Mixed Results

The findings relative to the second and third goals of this evaluation are mixed. Based on the cross-sectional data reported here, one can only speculate about the reasons for the success of tobacco use prevention in California youth. Elements of TUPE-funded activities appear to be related to increased awareness by youth regarding the dangers associated with tobacco use. But the students' awareness of the dangers of tobacco use probably benefit from the influence of pre-existing cultural and religious disincentives to smoke as well as from community-level tobacco control efforts (Flay, 2000; Turner et al., 2004).

Neither students nor teachers reported as much knowledge about tobacco control as would be expected if TUPE programs adhered to all of the recommendations of CDC school-based tobacco control guidelines. This was true in the 2001-2002 IETP report and it remains true in this successor report. If anything, the observed relationships between school-based TUPE efforts and student-reported knowledge, attitudes and smoking experience were even more modest in 2003-2004 compared to 2001-2002.

Schools varied in the percentage of sampled teachers who had experience teaching tobacco use prevention, in the mean number of hours that their sampled teachers reported spending in the last school year teaching tobacco use prevention lessons and in the degree to which tobacco use prevention messages were infused throughout the curriculum. Schools with a high percentage of teachers with past experience teaching tobacco use prevention lessons, and schools with teachers who reported a large number of hours of teaching tobacco use prevention lessons in the last school year were more likely to have students who reported exposure to tobacco use prevention lessons, reported refusal skills training, reported that the tobacco use prevention information they had received was helpful, and reported greater knowledge of SHS, actual peer smoking prevalence and the physical harm caused by smoking.

TUPE Training and Curriculum: Better with Experienced Teachers and Administrative Support

TUPE training should be viewed as a means to an end and not an end itself. TUPE training helps only to the extent that it can motivate new teachers to become more experienced tobacco use prevention teachers. Excellent TUPE training, by itself, may have less of an impact on student-level outcomes compared to equipping a few

dedicated TUPE teachers with a lot of experience. This inference stems from the observation that the frequency and content of in-service training to teach tobacco use prevention appeared to be unrelated to student reports of tobacco use prevention knowledge and other tobacco use-related outcomes.

One benefit of experience in teaching is the ability, through trial and error, to discover what educational strategies work better than others. Lecturing is often used to teach tobacco education messages but it is associated with unimpressive student outcomes. When school TUPE/health education coordinators reported that lecturing was the primary method used to impart tobacco use education, it was as if the students had not been exposed to any tobacco use education. They did not appear to learn anything more than students who were not exposed to tobacco use education messages. Students consistently reported more positive tobacco use prevention results when their school TUPE/health education coordinator reported that the school's TUPE classes featured classroom discussions of tobacco control messages. Small group activities were also somewhat useful, particularly for refusal skills training.

Teacher and TUPE coordinator reports indicated that few schools used the CDC-recommended TUPE programs, preferring to use a curriculum from the larger list of CDE-recommended TUPE programs. Use of CDE-recommended programs was associated with an increased percentage of students reporting acquisition of refusal skills. The data also indicated that dedicated teachers with past experience teaching TUPE lessons could positively affect student outcomes, even if they do not have a science-based TUPE program to help them.

Teachers reported that a lack of district (and state) support for TUPE was an important barrier to school-based tobacco control efforts. The less-than-desirable levels of TUPE training may reflect lack of support from the administrators to whom these teachers report. Administrators expressed high levels of support for TUPE instruction; however, a possible explanation for this discrepancy may be that maximizing student academic achievement test scores supersedes their support for TUPE instruction.

State resources for supporting school-based tobacco use education are dwindling. The perception that TUPE resources were diminishing (especially among site coordinators) was associated with lower student reports of TUPE lessons learned and TUPE knowledge gained. The enviably low rates of tobacco use reported here are going to be hard to maintain in the face of dwindling state TUPE resources, either with respect to school-based tobacco control or with respect to community tobacco control efforts. If evidence of a link between perceived under-investments in TUPE and lower student TUPE learning is supported, the contribution of school-based tobacco control efforts to maintaining these low adolescent tobacco use rates will be diminished. Encouragingly, at least in the present report, many non-TUPE funded schools are currently perceived by their teachers and site coordinators as actively supporting and investing in TUPE activities. The challenge, then, is to find alternative resources to replace the dwindling state TUPE resources.

A pattern that emerged in the previous IETP report and continues to pose a challenge also provides a cautionary message for district administrators. District administrators may turn to punitive enforcement of no-tobacco-use policies as the principal method of discouraging tobacco use among students in lieu of supporting TUPE programming. District administrator reports of enforcement were found to be associated with lower levels of exposure to prevention services – the higher the level of enforcement, the less likely students were to report that they received tobacco-related information at school or that they were exposed to lesson content.

TUPE Funding Generally Unrelated to Student Outcomes

Attempts to assess the impact of TUPE grant funding on student learning were complicated due to the cross-sectional nature of the data and the patterns of the results. The safest conclusion is that prospective longitudinal research is necessary to be able to draw causal inferences from the data collected. An anticipated change in the design of the next TUPE evaluation will provide a partial solution, namely resurveying a sample of the previously sampled schools. Repeated testing of the same schools over time may make it possible to discern longitudinal program effects by holding the demographic and cultural characteristics of the students relatively constant. If changes over time in tobacco use or in tobacco use-related knowledge and attitudes are observed in the resurveyed schools, it will be easier to distinguish the possible reasons for these changes, where possible explanations for similar changes are usually confounded by changes in the ethnic and cultural composition of the students.

Bearing in mind the recognized weakness of the cross-sectional nature of the current data, the most striking feature of the results was the lack of association between a school's TUPE funding status and student tobacco use outcomes. On the other hand, teachers' recent experience teaching tobacco lessons, their hours of instruction, the school's infusion of lessons into non-health-related subjects, the mode of instruction used (preferably class discussions), and the availability of smoking cessation resources on campus all influenced students' reported exposure to tobacco control program services in grantee and non-grantee schools. The preponderance of the evidence suggested that many school-based tobacco use prevention activities were effective in reaching students (in terms of exposure to TUPE lessons, not student tobacco use), whether they attended TUPE grantee or non-grantee schools. With respect to the third evaluation goal, evaluating the impact of program exposure on student tobacco use behavior, few conclusions could be drawn. Few differences in student tobacco use were observed between TUPE grantee schools and non-grantee schools. The features that had the most influence on student knowledge and attitudes toward tobacco use (Chapter 7) were also the ones that had the most influence on student tobacco use behavior in Chapter 8. Two features, in particular, stood out: hours of teaching TUPE lessons (teacher report), especially in TUPE grantee schools, and use of classroom discussions (as identified by the school coordinator). The few other significant differences proved difficult to interpret. Even when grantee versus non-grantee status was ignored, there were few significant relationships observed between intensity of TUPE instruction and student tobacco use outcomes. Because this data represents a

snapshot in time, causal inferences about TUPE activities “working” or “not working” are premature.

Recommendations

Specific to the potential for teachers to influence student tobacco use, the findings reviewed especially in Chapters 4, 5, 6, 7, and 8 suggest the following recommendations:

- Schools need to identify committed TUPE “champions” to be their TUPE coordinators. TUPE coordinators' knowledge of resources and how they can be best utilized can make a difference in student TUPE outcomes.

- School administrators and TUPE coordinators need to concentrate the TUPE training resources on a few good teachers rather than try to recruit whoever happens to be available to teach TUPE lessons. A few, very experienced TUPE teachers can yield better tobacco use education outcomes among students compared to many inexperienced TUPE teacher recruits.

- School TUPE coordinators need to make sure that TUPE teachers de-emphasize the use of lectures and encourage them to use classroom discussions and small group activities for transmitting tobacco use information effectively to students.

- School district administrators need to publicly support TUPE activities, to publicize this support regularly and to indicate that TUPE instruction is as important as other academic instruction. Teacher efforts will be more effective when they know that they have support from their administrators for their TUPE activities. District administrators need to be discouraged from the temptation to rely on stronger enforcement of punitive no-tobacco-use policies in lieu of seeking alternative sources of support to maintain current levels of active TUPE programming.

Future Research on Student Tobacco Use and TUPE

The results of examining the impact of teacher-level and district staff-level information on student-level tobacco use help to illuminate the contextual nature of student tobacco use. The findings reviewed in Chapter 7 raised more questions than answers, however. Comprehensive understanding of how various tobacco control strategies can help students to avoid tobacco use requires more information about teacher training, teacher motivation, fidelity of TUPE instruction, family receptivity to tobacco control information and students' capacity to use the information given to them than has been addressed in this report. There is probably no single tobacco control policy that will work in all schools all the time with all types of students. In the meantime, the TUPE strategies reviewed in this report and those that were originally featured in the consensus school guidelines promulgated by the CDC (1994) continue to provide good strategies for effective

tobacco use prevention, pending further clarification regarding the contexts in which each strategy works best.

With recent progress in the development of multi-level statistical models (e.g., Raudenbush and Bryk, 2002), it is becoming increasingly possible to more rigorously evaluate the separate contributions of schools, communities and statewide policies to successful (or unsuccessful) tobacco use outcomes. This evaluation has also been facilitated by the increasing commitment to collect longitudinal data (at least at the school-level) and the pioneering collection of community-wide tobacco control data by the state of California.

This report covered only some of the epidemiological information that could potentially be extracted from the data collected and reported here. Future analysis of this data by other investigators may illuminate measured influences not addressed here. As a one-time snapshot of the tobacco use status of in-school youth, these data do not permit causal inferences to be made with confidence. When viewed in light of recent past and future tobacco use data also collected from in-school California youth, causal inferences can be made with more confidence. No single study can capture all of the major influences on adolescent tobacco use. The reader is encouraged to review the epidemiological findings reported here in light of the changing conception of adolescent tobacco use behavior emerging in the scientific literature (e.g., Turner et al., 2004).

References

Centers for Disease Control and Prevention (CDC). 1994. Guidelines for school health programs to prevent tobacco use and addiction. *Morbidity and Mortality Weekly Report, 43*(RR-2), 1-18.

Chaloupka, F. J. and R. L. Pacula. 1999. Sex and race differences in young people's responsiveness to price and tobacco control policies. *Tobacco Control, 8*, 373-377.

Chaloupka, F. and H. Wechsler. 1997. Price, tobacco control policies and smoking among young adults. *Journal of Health Economics, 16*, 359-373.

DiFranza, J. R., J. A. Savageau, K. Fletcher, J. K. Ockene, N. A. Rigotti, A. D. McNeill, M. Coleman, and C. Wood. 2002. Measuring the loss of autonomy over nicotine use in adolescents - The DANDY (development and assessment of nicotine dependence in youths) study. *Archives of Pediatrics and Adolescent Medicine, 156*, 397-403.

Everett, S. A., C. G. Husten, L. Kann, C. W. Warren, D. Sharp, and L. Crossett. 1999. Smoking initiation and smoking patterns among U.S. college students. *Journal of American College Health, 48*, 55-60.

Flay, B. R. 2000. Approaches to substance use prevention utilizing school curriculum plus social environment change. *Addictive Behaviors*, *25*, 861-885.

Moolchan, E. T., M. Ernst, and J. E. Henningfield. 2000. A review of tobacco smoking in adolescents: Treatment implications. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*, 682-693.

Peterson, A. V., K. A. Kealey, S. L. Mann, P. M. Marek, and I. G. Sarason. 2000. Hutchinson smoking prevention project: Long-term randomized trial in school-based tobacco use prevention - Results on smoking. *Journal of the NCI, 92*, 1979-1991.

Raudenbush, S. W., and A. S. Bryk. 2002. *Hierarchical Linear Models. Applications and Data Analysis Methods* (2nd ed., pp. 483). Thousand Oaks, California: Sage.

Rohrbach, L. A., B. Howard-Pitney, J. B. Unger, C. W. Dent, K. A. Howard, T. Boley-Cruz, K. M. Ribisl, G. J. Norman, H. Fishbein, and C. A. Johnson. 2002. Independent evaluation of the California tobacco control program: Relationships between program exposure and outcomes, *1996-1998. American Journal of Public Health, 92*, 975-983.

Turner, L., R. Mermelstein, and B. Flay. 2004. Individual and contextual influences on adolescent smoking. *Annals of the New York Academy of Sciences*, 1021, 175-197.